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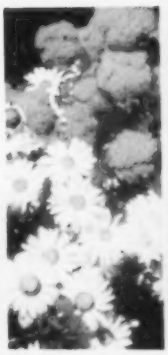

Key to outdoor lighting • Night photography • Bad-weather pictures
Film & Filter guide • What accessories to take • Landscapes
Big-camera quality from 35 • Sports and action • How to plan slide shows
How to shoot pictures from trains, planes, and buses • Portraits
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16-PAGE PHOTO VACATION HANDBOOK

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ON ASSIGNMENT WITH JACQUES LOWE:

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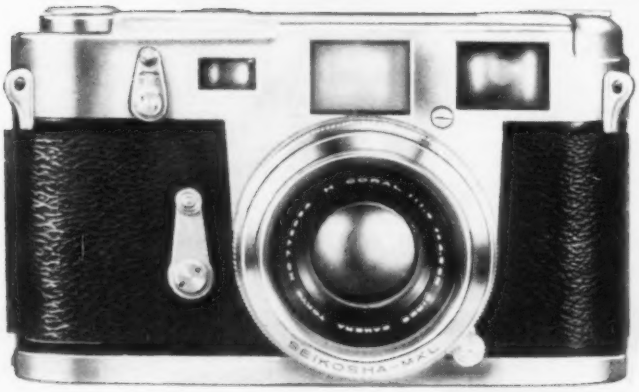

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JUNE, 1958 VOLUME 42, NO. 6

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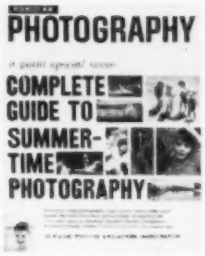

Summer cover photographers: sand-lot baseball game, Sam Wetmore, Birmingham, Ala.; four girls on beach, Edward Raczkowski of the U. S. Army; red barn and flower close-up, Salvatore Valastro, Burlington, Vt.; girl in bathing suit (2 pictures), Bruce Downes, Stewart Manor, N. Y.; child in swing, Arthur T. Grahn, Oakland, Calif.; girl with parasol, Marlis Welsh, Charlotte, N. C.; harbor scene, Jules Alexander, New York City. See *Rangefinder* for technical data.

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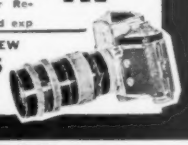

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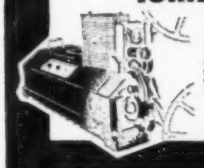

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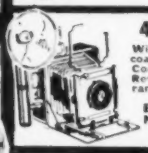

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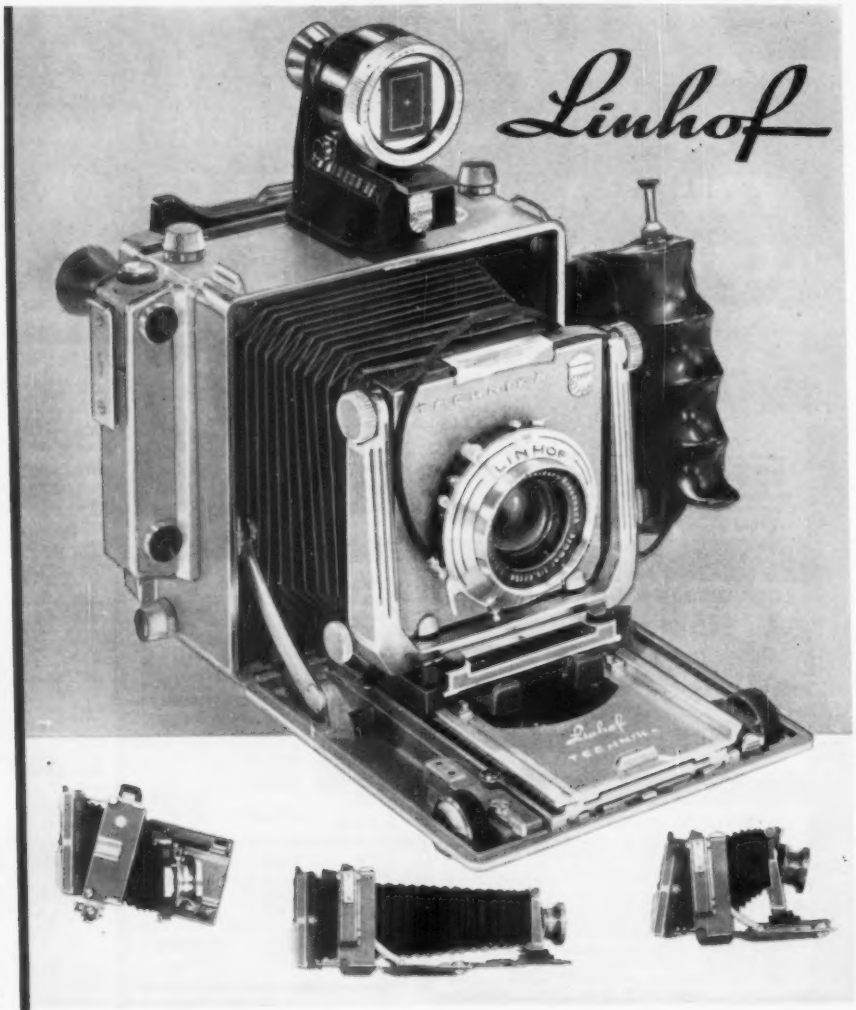

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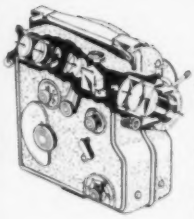

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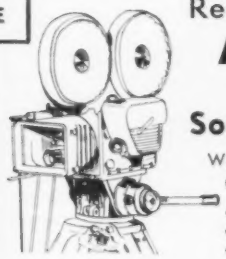

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LETTERS TO THE EDITOR

What you can learn from pictures

Thank you for an interesting subject in the March issue, *What You Can Learn from Pictures*. That is how I learned to take pictures; looking at them. My likes are well established by now, but it was interesting to read what young people and professionals have to say. The most useful thing to me, I found, was being strict about what I like, whether it was commercial photography, photojournalism, or creative essays. This helped me set standards that I try to live up to.

PRESTON LANGWORTHY
Brownsville, Tex.

Mr. Hattersley's article *How To "Read" a Photograph* (March) impressed me tremendously, for when he stated that being able to read pictures would create sympathy and understanding in this world, I read on avidly. After studying and reading the three controversial pictures, I discussed them with a friend. When all he could see and read in that fine portrait of Peter Freuchen was a nice old man, the discussion reached almost fighting words between us. What goes? Wasn't it supposed to lead to peace?

NAT GOLDSTEIN
Sea Gate, N. Y.

Your March issue was a milestone in photography. This is a significant step in our business which should receive more emphasis than it has. Too many in the trade are producing wishy-washy, repetitive material of no value. I think intelligent, honest analysis may help to awaken the bulk of photographers to a new way of seeing. Condensations of this issue should be published in general-interest magazines so that the people outside of photography might have a chance to realize the value of great photographs.

ART IRONS, JR.
Flushing, N. Y.

POPULAR PHOTOGRAPHY has been noticeably ascending toward finer editorial goals and in the March issue you have presented one of inestimable worth. Social scientists are pointing out alarming evidence of a decline in the individual will to evaluate cultural forces in society. In Mr. Hattersley's words, "the explanation is fascinating but much too complicated . . . to be attempted here." Your magazine has created one remedy, and if readers will absorb, with empathy, its contents, they will gain some knowledge of the excitement that comes from probing into the psychology of their thinking. We are richer for your contribution. "Thank you" seems but feeble applause.

CALVIN LEE WILDER
Boston, Mass.

Pittsburgh phenomenon

As a photo collector and reader of POPULAR PHOTOGRAPHY, I was surprised that your editors suspected that the photo on page 79 of the March issue might be posed. While this is possible, it is more likely to be a spontaneous shot. As a Car Department employee of the Pittsburgh and Lake Erie railroad, I could have posed for that shot myself, or been caught by accident while "blowing" dust, etc., off train platforms. Furthermore, the mysterious lights below could be the lights in a pit between rails to allow easy access to the underside of passenger cars. I use the same type of face mask, which has a cotton filler inside the metal, and the goggles look similar to the type I wear. You might be photography experts but in industrial matters you should go way back and sit down.

IVAN W. SAUNDERS
Pittsburgh, Pa.

• *This is the price one pays in an age of specialization; we're sorry.*—ED.

For real?

Seeing Seins?

Could the photograph entitled "Island of Seins" (March, page 59) be a clever composite or paste-up? The light on the waves seems to come from left front, that on the foreground from left back. This could happen with two floods but not in nature. Also, the first and third child seem to be either identical twins or the same person. Possibly Mr. Hardy was on the right track when he said the picture reminded him of "Hollywood stuff of projected backgrounds." One could take a low-angle shot of waves, silhouettes of children, combine the two, rephotograph and get the impression of unreality this photo gives.

R. LORANG
Photography Department
Maryknoll Teachers College
Maryknoll, N. Y.

• *After looking again at the original print, we do not feel that the light is coming from two different angles. Perhaps the reproduction gives this impression.*—ED.

The LEICA IIIg is the current model in the evolution of the classic Leica design, a design long proven for precision and dependability. Now, with new, advanced features and operational refinements, the IIIg and the new 50mm Elmar f/2.8 lens give you that rare combination of maximum quality at minimum cost. The light weight, compactness, and traditional versatility of the Leica, remain. These special features back up its performance:

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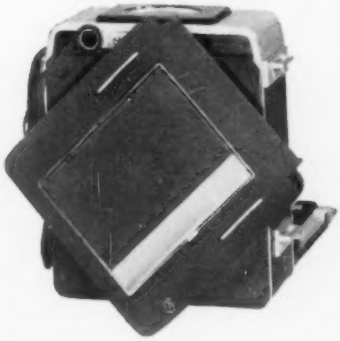
ONE of the outstanding features of the new Super Graphic is the triple-purpose coupled rangefinder. This distinctly new focusing device gives the critical photographer greatly expanded flexibility found in no other camera. It is an integral part of the camera, built in and positioned for utmost convenience and operating ease.

This advanced, new rangefinder permits (1) Precision optical focusing for critical work; (2) accurate dial focusing for fast camera operation; and (3) automatic indication of f-numbers for correct flash exposures.

The rangefinder operates by means of interchangeable cams which are matched to the measured focal length of any normal, wide angle or telephoto lens. These cams are extra-large, easy to handle and can be inserted in a second's time. The same cams also operate the Focusing Scale Indicator and Automatic Flash Computer located on top of the camera.



1 FULL 360° REVOLVING BACK
This new feature has click stops for horizontal and vertical positions. Double-cam-action sliding locks firmly grip Grafmatic, Roll Holder, Polaroid Back and Film Pack Adapter. Film holders can be inserted from top, bottom, right or left, for utmost convenience.

2 Great flexibility of all movements to adjust composition and depth of field. Front lens standard tilts forward and back, swings right and left, rises and drops, shifts right and left.

3 Forward tilting lensboard and drop bed combine for 27° tilt. Increases apparent depth of field when taking pictures from a balcony, up a flight of stairs or in similar situations. Drop bed also accommodates wide angle lenses.

4 Lateral swing increases apparent depth of field when photographing some types of subjects. Can be used in combination with all other tilts, swings and shifts to correct optical distortion, parallelism and composition.

5 Built-in BC circuit with self-contained batteries for electrical shutter release. Conveniently located electric body release button. With Graflite and Stroboflash accessories you trip electrically with either hand at the camera or remotely.

6 Automatic focusing scale indicator is located conveniently on top of the camera. This one scale matches any lens you use on the camera. Combines with flash exposure calculator; just set dial for guide number, focus camera and read correct f-number setting indicated by pointer.

7 Super Graphic Presslok Tripod Mount (accessory) fits any tripod and can be left permanently attached. Twin keyhole locks provide for instantaneous, fumble-free mounting of camera. Assures rigidity. Camera cannot be accidentally released.

8 Any wide angle, normal or telephoto lens and shutter suitable for a 4x5 camera can be mounted on a Super Graphic lensboard assembly. This assembly includes all internal connections for flash synchronization and electric shutter tripping. Lock lensboard in place and all connections are complete.

9 Concealed wires connect electric shutter release button, shutter and three-prong outlet for flash connector cord. This eliminates dangling wires on the lens standard and permits opening and closing of the camera without disconnecting the flash.

138 NEW PRODUCTS!

A SPECIAL REPORT FROM THE CHICAGO PHOTO SHOW

by BOB SCHWALBERG

CHICAGO—The 34th annual week-long trade show and whing-ding of the Master Photo Dealers' and Finishers' Association, held at the Conrad Hilton hotel here in March, defies simple summation. It was a big show--only IPEX and Photokina were bigger—with a record-breaking total of more than 150 exhibitors scattered helter-skelter over three floors, and anyone who thinks that its impact can be boiled into a few sentences just wasn't there. Once again, the 35-mm camera, its lenses and accessories formed the biggest battalion, filling more booth-space and, probably, more dealers' order blanks.

And yet, if a lethal weapon were pointed at this reporter's cranium and a one-word analysis demanded, I'd have one ready: AUTOMATION

This trend toward taking some of the thinking away from the photographer and building it into the camera wasn't born here, or at last year's, or any year's show. Probably it had its start when somebody got the idea that some pieces of metal with assorted springs and stuff could slice time better than a photographer waving his hat in front of the lens. And, historians will note, the first truly automatic "electric-eye" camera was the Kodak Super 620, marketed back in 1937. Our stand on automation as the key trend this time around is based on sheer weight of numbers. Not counting previously introduced equipment (like the Agfa Silette, "66," and Voigtlander Vitomatic) which were exhibited, and a good number of discontinued items that were not, nine different firms took this occasion to introduce sixteen brand-new automatic exposure-computing cameras (five 35's and 11 8-mm movie cameras).

Bell & Howell displayed a handsome line-up of four electric-eye cameras which set your exposure for you as you film the scene. Two of these new 8's are so completely automated that the user doesn't even have to set the camera for Daylight or Type A Kodachrome exposure indexes, this onerous chore being handled by a so-called "solar grid" on the front face of the meter. What this is, actually, is a yellow filter which automatically compensates for the speed difference between the two films by absorbing blue in daylight for the EI 10 rating, while passing most of the artificial rays for EI 16.(Continued on page 16)

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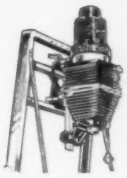
DOWLING'S Proudly Presents The Great New BESELER 45H



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The complete line of BESELER Enlargers and accessories is available from DOWLING'S. Write for FREE brochure or rush your order to us—today!

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Other professional models available for 8, 16 and 35mm. Write to DOWLING'S for details.

NEW 1958 HASSELBLAD 500C

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MINOX IIIs

A complete precision camera only 2½" long! Get real "candids", big enlargements, brilliant color shots. Only $139.50 Cash or **$13.50 Down.** New 1958 black finish "Private Eye" model $154.50 Cash or **$14.50 Down.**

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Monaural model NL-1 only **$109.95 Cash or $9.95 Down.**

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Regularly $309.95. At DOWLING'S only **$219.95 Cash or.....** **$19.95 Down**
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BONUS: Six reels of high quality two-hour recording tape for only $10 when purchased with a new PENTRON Tape recorder from DOWLING'S!

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now adds a baby, a convertible and two 8mm movie cameras to its largest selling reflex line

now YASHICA value can be enjoyed by all!

A little over a year ago, Yashica brought to the reflex camera enthusiasts a new standard for quality and value. Now Yashica quality and features can be enjoyed by all. For in addition to two new reflex models, Yashica now offers a new, sensational line of 8mm movie cameras. These new Yashica models are now being featured where ever fine cameras are sold. Be among the first to see and try them.

Maybe you've seen such quality before – but never at these prices.

the new baby

YASHICA 44

Yashica 44 is the brightest idea in cameras. It uses 127-size film – takes 12 pictures in black & white or color – 12 sparkling superslides. Packed with advanced features and distinctive styling, it fits the bill whether you're looking for an all-purpose camera or a second camera exclusively for color-slides.

$59.95 *leather case $10.00*

the new convertible

YASHICA 635

Lets you use 120 and 35mm film with one camera. Features field-lens focusing, eye-level viewing and semi-automatic film transport for both film sizes – and rewind provision for 35mm. Two film formats plus all the quality features that have become identified with Yashica reflex values.

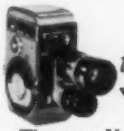
$69.95 *with deluxe leather compartment case*

the new 8mm movie camera

YASHICA 8

Exciting new Yashica way to 8mm movie-making. Features the Yashikor f/1.9 lens, in focusing mount; 16 frames-per-second speed and single exposures; zoom-type viewfinder with settings for 6.5, 13, 25 and 38mm lenses, and provision for Yashica-Scope wide screen attachment. Other features include a ratchet wind, drop-in sprocketless film loading and automatic footage counter.

$49.95 *with Yashihor f/1.9 focusing lens*



the new 8mm turret outfit

YASHICA T-8

The new Yashica T-8 combines advanced features, and superb optics with precision and ease of operation. Yashica T-8 offers 7 speeds, from 8 to 64 frames-per-second and single exposures; a zoom-type viewfinder for 6.5mm to 38mm lenses and Yashica-Scope, wide-screen attachment; ratchet wind; drop in loading; automatic footage counter; and a Yashica wrist-strap.

$79.95 *with 13mm Yashinon f/1.4; with 13mm & 38mm Yashinon f/1.4's* **$119.90**

LENSES AND ACCESSORIES FOR YASHICA MOVIE CAMERAS

Yashica 8mm lenses – great lens speed has been achieved without sacrifice in definition. Available in standard "D" mounts – for Yashica or any other precision '8.'

6.5mm Yashinon f/1.4, superspeed wide angle . **$44.95**
38mm Yashinon f/1.4, superspeed telephoto . . **39.95**
Yashica-Scope wide-screen (Anamorphic) attachment, with viewfinder mask **39.95**

Yashica Accessories – for Yashica 8 or Yashica T-8

Soft leather case, velvet-lined, with shoulder strap, styled in gray. **$5.95**

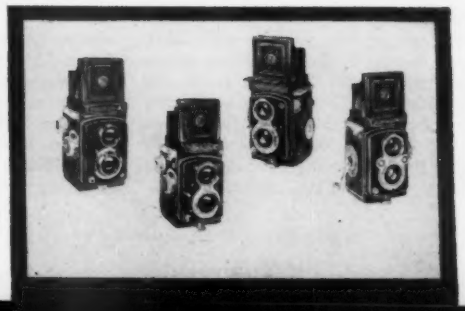
Compartment case, with ample room for accessory lenses, film, meter, filters, etc. Deluxe saddle leather, finished in gray. **$14.95**

Screw-in wrist strap – for steadier movies. **1.00**

YASHICA

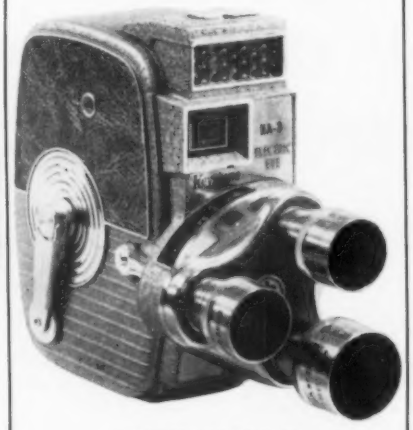
Yashica Inc., 234 Fifth Avenue, New York 1, N.Y.

Yashica A $29.95, case $6.00; Yashica C $46.50, case $8.00; Yashica LM $59.95, case $10.00; Yashica-Mat $75.50, case $10.00



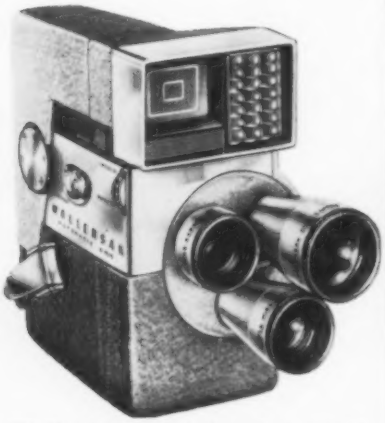
HERE ARE SOME CAMERAS FEATURING AUTOMATION

Bell & Howell Electric Eye 393



Keystone KA-3

Bauer 88DS



Wollensak "46" Tru-Automatic

Mamiya Metramatic

Regula III a Automatic

For more "automation" still cameras see *What's New*, starting on page 44

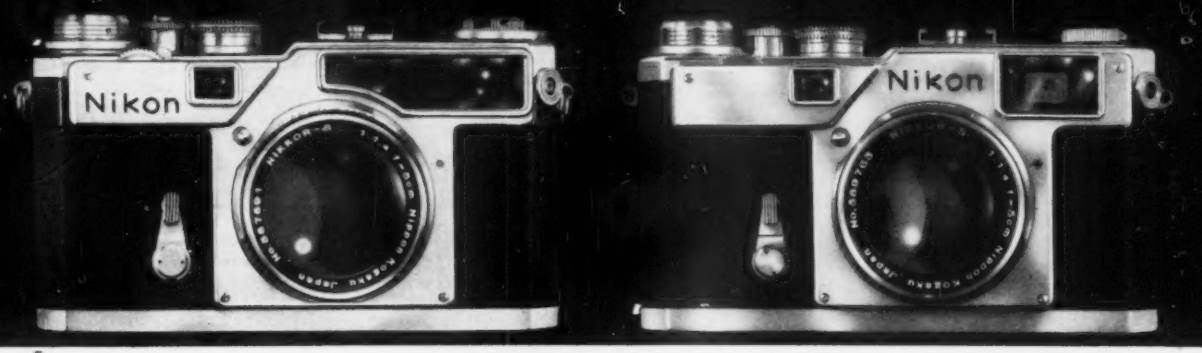
The cameras with solar grids are the B&H models 392 ($129.95 with 10-mm f/1.8 lens) and the 393 ($159.95 with three-lens turret). This turret contains a 10-mm f/1.8 prime lens over which conversion elements are positioned to form a 6.5-mm wide-angle and a 25-mm tele, both operating at f/1.8. A single triangular filter snaps over the entire turret obviating individual filter confusion and imbalance, and both the 392 and 393 permit optional manual operation. Neither of the other two, less expensive, models offer this option. Differing in the single-lens optics supplied, the model 391 has a 10-mm f/1.9 (listing at $119.95) while the 390 is a rock-bottom $99.95 with its 10-mm f/2.3. The 390 and 391 do not have the solar grid feature, so the user must push a button to either of two film-type positions before shooting — well, you can't have everything!

The Keystone KA-3 electric eye 8-mm camera won't start a film run unless the exposure is right, and once a film-run is started at a meter-approved exposure, the setting stays with the camera even as it's panned toward very dark and/or bright subject areas. If you want the diaphragm to vary constantly as the camera is played over light and dark subjects just keep pressing the meter starter button. A turret model, the KA-3 has a 12.5-mm normal lens plus conversion elements for 7.5-mm wide-angle and 25-mm tele focus, all with a maximum aperture of f/1.8. Other features include built-in haze and Type A conversion filters plus a provision for working the diaphragm manually for "fade" and other effects. The KA-3 is priced at $149.50.

Still another automatic 8 was introduced by Wollensak. Called the "46" Tru-Automatic, it's an 8-mm spool-loading turret camera which follows the basic outlines of the Revere CA-2 (Wollensak is a subsidiary of Revere) except that the numbers have been eliminated from what is actually the diaphragm, and all you do is press the button and shoot. The turret carries a 13-mm f/1.8 (prime lens), and 9-mm and 32.5-mm focal-lengths are obtained again, by converters. The Tru-Automatic exposure computer can be disengaged when desired, and the camera sells for $144.50.

Another electric-eye 8, the DeJur Electra, has a red warning signal which flashes in the viewfinder whenever the light is too dim for correct color expo-

now
there
are
2
great
35's



NIKON SP and NIKON S-3

to give you complete command of the 35mm art

So responsive and smooth-working are these two new instruments, so easy and fast to handle, it is as if the photographer were suddenly liberated from all the distractions of camera mechanics – and free to perform his creative work. Never before has camera design been more perfectly suited to its task.

The new Nikon S-3 and Nikon SP are identical in body design and features, in rugged quality and precision. Only their viewfinders differ. The Nikon SP features the sensational built-in Universal Viewfinder System with viewing fields for six different lenses: 28mm wide angle through 135mm telephoto. The new Nikon S-3 introduces the built-in Trifocal Viewfinder for 35, 50 and 105mm lenses.

Accessories are fully interchangeable between models. Whether you select the SP or S-3 for your work, you can call upon the automatic fire-power offered by the Nikon Electric Motor Drive; the convenience of the shutter-coupled Exposure Meter; the unmistakable quality of Nikkor lenses; and the added versatility of a host of Nikon Accessories.

For complete details, write to: Nikon Incorporated, Dept. PP-6, 251 Fourth Avenue, New York 10, New York. In Canada: Anglophoto, Ltd., 880 Champagneur, Montreal, P. Q.

S-3 or SP, Nikon gives you an extra edge, in every picture situation

Nikon S-3 with 50mm Nikkor f/2 $309.50; with 50mm f/1.4 $355 • Nikon SP with 50mm Nikkor f/2 $369.50; with 50mm f/1.4 $415

This is the popular FR ELECTRONIC FLASH — MODEL 140 . . . priced at just $29.95. With this FR, thousands of owners tell us, the savings-per-flash resulting from your switch from flashbulbs more than pays for all the film you'll use! This compact AC unit was specially engineered for rapid use with 35MM and reflex cameras. Basic accessories include a power supply operating on four 20¢ batteries at $14.95; your present flashbulb gun is perfect to fire the MODEL 140 equipped with the slave unit for a multiple flash set-up — $14.95. Low-cost bounce-light brackets, spring clamps and tripper cords are available for interchangeable mountings and cameras. FR invites you to test the FR MODEL 140 on your own camera at your local photo store.

5-7 seconds between flashes; Kodachrome Guide No. 30-35; Extreme lightweight design; fits most cameras.

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sure. A hinged metal cover-plate protects the meter cell when the Electra is set at "manual," pops open automatically when set for "automatic." With 3-lens turret (f/1.8 wide-angle, normal, and tele lenses) the Electra lists for $149.95.

Automation of another sort in which the photographer manipulates a diaphragm-lever to keep a moving light-sensitive needle aligned with a fixed marking on his viewfinder screen is incorporated in a new 8-mm Eumig, the C-3 Continental. A turret model of the previously introduced C-3, the Continental uses a conversion-element system with a 13-mm f/1.9 normal lens becoming either a 6.5-mm wide angle or a 26-mm long lens. Price, $169.95. (After January 1, 1959, the importer, Unimark, will put turrets on any C-3's that want to go Continental.)

Semi-automatic exposure control is combined with full sound synchronization in a pair of new Bauer 8-mm Sonomaster cameras. Synchro-sound movies made with the Bauer 88ES and 88DS (using any standard tape recorder) can be projected with the Bauer T-10 8-mm sound projector by means of an electronic sound coupler that doubles for taking and projecting. The Bauer 88ES is equipped with a 13-mm f/1.9 focusing lens and is priced at $199.95. No price was available at press time for the Bauer 88DS, a 3-lens turret version of the 88ES. Both Sonomaster models have a semi-automatic exposure system (lens aperture control is coupled to a photoelectric exposure meter; lining up two indicators visible in the viewfinder window sets exposure), speeds of

YOU'VE ALREADY READ ABOUT THESE PHOTO SHOW PRODUCTS...

AUTOMATIC MIRANDA
See page 44, May POPULAR PHOTOGRAPHY

SUPER GRAPHIC
See page 112, May POPULAR PHOTOGRAPHY

KODAK CAVALCADE SLIDE PROJECTOR
See page 36, May POPULAR PHOTOGRAPHY

HEILAND FUTURAMIC STROBONARS
See page 30, May POPULAR PHOTOGRAPHY

KODAK GENERATOR FLASHOLDER
See page 40, May POPULAR PHOTOGRAPHY

EVEREADY ENERGIZER BATTERIES
See page 40, May POPULAR PHOTOGRAPHY

REALIST 400
REALIST 400 AUTOMATIC
See page 40, April POPULAR PHOTOGRAPHY

TRU-FLECTOR PROJECTOR LAMP
See page 38, April POPULAR PHOTOGRAPHY

HICO-LITE 496
See page 42, April POPULAR PHOTOGRAPHY

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Selected 1958 BOLEX H-16 Leader Outfits:

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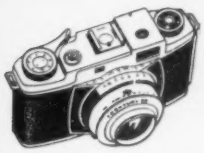

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2¾ x 2¾	4.00	17.95	32.00
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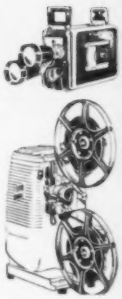

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- Complete book "How To Make Home Movies"

You get all for only $9.95 Down

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Get in on the fun—order from DOWLING'S today!

Telephoto and wide angle lenses are mounted on compact quick-turn turret, attach instantly to camera.

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WOLLENSAK "43-D"

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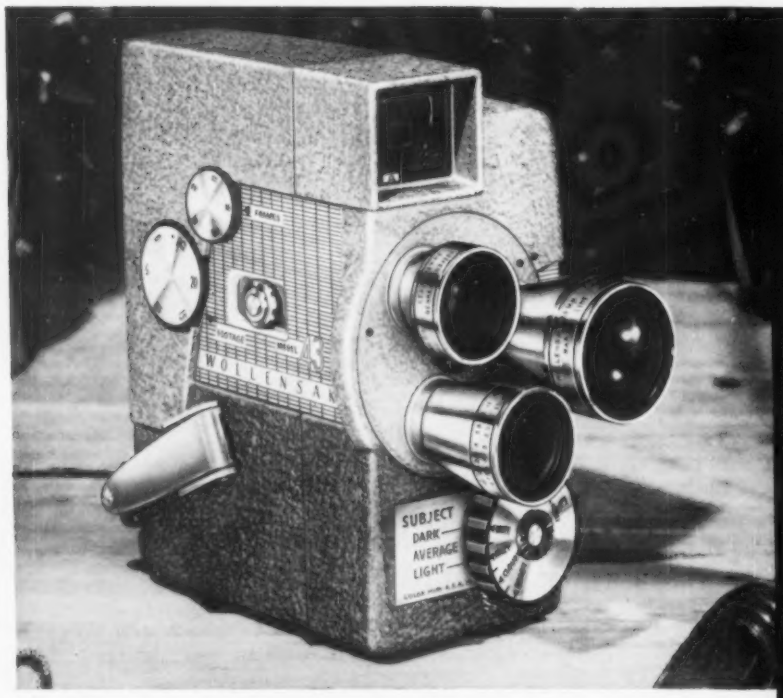

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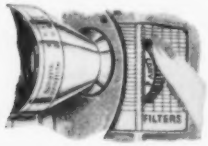
AUTOMATICALLY sets correct exposure by merely matching light condition to subject.

f/1.8 THREE LENS TURRET SYSTEM

AUTOMATICALLY brings any one of three lenses into proper position for normal, wide-angle or telephoto shots.

TURRET SAFETY POSITIONING

AUTOMATICALLY allows function of camera only if turret is in proper "click" position.



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AUTOMATICALLY computes and indicates correct f/stop value for each of 5 speeds.

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Here's the home movie camera that's actually three cameras in one! Let's you shoot three different views from the same position. Thrilling professional telephoto close-ups. Big wide angle panoramas. And the normal views of conventional cameras. What's more, you simply "dial it" and up comes the right lens, the right exposure and the right filter. You simply "dial 'n' shoot". Taking home movies of the family's happy events couldn't be easier, surer, than with this Wollensak 8mm Turret Camera. Stop in at your authorized Wollensak dealer and ask to see the amazing WOLLENSAK "43-D" today.

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"43-D" 8MM TURRET MOVIE CAMERA—In addition to the outstanding features illustrated, the WOLLENSAK "43-D" includes a sensational f/1.8 3-lens system with 13mm f/1.8 Normal Cine Raptar Wocoted lens in fixed focus plus conversion units in turret that rotate into place to form a 9mm f/1.8 wide-angle or 32.5mm f/1.8 telephoto; drop-in film-spool loading; powerful long-run motor; rapid crank wind; large "Picture-Window" view-finder with tinted mask; continuous run and single frame exposure provision and many other advancements, F.E.T. inc. **$99.50**

"42-D" 8MM MOVIE CAMERA—Single lens model with 13mm f/1.8 Cine Raptar Lens; same features as above, F.E.T. inc. **$69.50**

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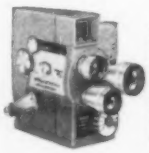
"72" 8MM MAGAZINE CAMERA

Magazine load, fast 13mm f/1.8 lens. "Weather-Eye", built-in filters. Mechanical "Heart-Beat" signals proper film advance. F.E.T. inc., **$99.50.**



"73" 8MM MAGAZINE TURRET CAMERA

Fast f/1.8 3-lens turret system for normal, wide-angle and telephoto shots; instant magazine load; 5 operating speeds. F.E.T. inc., **$149.50.**

"715" 8MM MOVIE PROJECTOR—Push button controls; forward, reverse and still; AC/DC; rheostat; removable splicer; 500-750 watts; three 400-ft. reels, case.....**$162.50**

"815" 2x2 SLIDE PROJECTOR—Shows 35mm, bantam or 1½"x1½" slides automatically! 5" F/3.5 lens. Case, extra condenser lens, cord and 7 magazine trays.....**$149.50**

If you want to know about

the **EXAKTA** *camera . . .*

ASK THE MAN WHO OWNS ONE!

FROM THE EXAKTA REGISTRY FILE:

V.H.F., Lanada, Calif. . . ."This is my third Exakta, none better."

A. H. H., San Diego, Calif. . . ."I compared features of other cameras for three years, then bought an Exakta."

P. A. A., Upper Darby, Pa. . . ."Exakta has the best reputation in the 35mm single lens reflex field."

J. J. B., Bellevue, Ky. . . ."It's the one camera that does what my previous two did."

M. G. J., Washington, D. C. . . ."I do medical photography and checked all cameras for use in eye operation photography and this is the best . . ."

M. L. R., Dalton, Ga. . . ."This is my second Exakta. The first, is still going strong after five years of hard usage. I cannot praise the Exakta too highly."

A. T. B., Waltham, Mass. . . ."We now own three Exaktas—**two** for color—**one** for black and white."

J. C. K., West Chester, Pa. ". . . the best type of 35mm."

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Dr. G. R. T., Ft. Thomas, Kentucky . . ."We are using your Exakta camera in our Pathology laboratory and are very well pleased with it."

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V. R., Berkeley, Michigan . . ."I have been an Exakta owner for many years and my friends and I think there is no finer camera."

D. B. R., Moorestown, N. J. . . ."the Exakta is a wonderful versatile camera—and I consider myself most fortunate to own one."

K. K. R., San Diego, Calif. . . ."as a teacher in color photography the advantages of the Exakta over any other camera have convinced many students their work can be improved by using an Exakta. The Exakta is the most versatile 35mm camera made."

L. E. S., Tacoma, Wash. . . ."I think it is the best camera on the market."

J. E. C., Westwood, N. J. . . ."I own two Exaktas . . . both are wonderful. The Exakta does everything that a camera can do . . . I use it for telephotography . . . I use it for scientific work . . . also photomicrophotography. I use it with electronic flash."

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C. S. D., Chicago, Ill. . . ."Members of our office are using your very fine Exakta Camera. It has already paid for itself in terms of chart and pictorial slide presentation value . . ."

The Automatic Exakta IIa is available with Penta-Prism eye-level Viewfinder and Split-Image Rangefinder and 58-mm., F/2.0 Carl Zeiss Jena Biotar lens with Automatic Diaphragm . . . . . $399.

For illustrated Automatic Exakta IIa brochure, write Dept. 250.

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Eliminates costly errors and trial exposures in color photography. Tells you instantly: color temperature of light source (in degrees Kelvin), and the filter required for correct color balance with *any color film.*

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Kit of 6 Filters								
9.95	9.95	11.50	11.50	14.50	14.50	25.95	41.95	59.95
Each Filter (any color)								
1.70	1.70	2.00	2.00	2.50	2.50	4.50	7.50	10.50

Write for complete set of new Filter data charts...(They're yours—absolutely FREE) to:

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4 to 48 frames per second, and sprocketless spool loading. A less expensive model, the 88D, offers all the above features except the sound-synch system. Price not yet announced.

Automatic exposure calculating 35's shown for the first time in Chicago are the Braun Paxette III and Minolta Auto Wide (See *What's New* stories on pages 58 and 50), the Lordomatic, the Mamiya Metramatic, and the Regula IIId Automatic. As shown, the Lordomatic is a Silette SL type with follow-pointer operation through meter-to-shutter-diaphragm linkage. Final decisions on other features are still forthcoming, but definitely on the way.

The Mamiya Metramatic introduces a new concept in still-camera exposure automation: automatic eye-level metering. This has been accomplished not by mirrors, but with prisms which pipe an image of the integrated exposure meter needle around corners until it emerges in an optical slit about 1/16th of an inch wide and 3/8 of an inch long that's positioned directly above the viewfinder-rangefinder eyepiece. A slight movement puts your eye in position to see the metering needle against a white bar which has a double-thickness in its center. By rotating the diaphragm ring you bring the needle into this heavy center area, and there you be. When desired, the Metramatic can be operated conventionally from the top of the camera a la Silette SL, Vitomatic, etc., using the now familiar non-calibrated follow-pointer system. Other Metramatic features include a Seikosha MXV shutter with nine speeds to 1/500 sec, a single-stroke advance-lever that's bottom-mounted because of the meter, a large release-button located on the camera front close by the diaphragm control wheel used in metering, and automatic cross-coupling of aperture and speed settings once the exposure has been set. The Mamiya Metramatic is available with 50-mm *f*/2.8 Mamiya Sekor for $99.50, or with a 48-mm *f*/1.9 Mamiya Sekor at $139.50.

A last-minute arrival flown in from West Germany on the third day of the convention was the Regula IIId Automatic, which (with the Braun Paxette Super III) brings to two the number of automatic-exposure 35's with interchangeable lenses. The new Regula IIId operates on the follow-pointer system in which a movable pointer actuated by the diaphragm control ring is aligned with the light-indicator needle on a completely numberless meter scale. The camera employs a Bewi "quick-stop" push-button meter which simplifies operation by making readings possible while holding the camera at eye-level and centering the subject in a combination range-viewfinder window, as well as allowing you to take readings with the camera held at arm's length or in other awkward positions required by the subject or lighting conditions. Once the meter's push-button is released, the needle position is locked and the follow-pointer may be aligned while the camera is held in any comfortable position. Other features include a Prontor SLK shutter with speeds to 1/300 sec, optional cross-coupling of diaphragm and shutter settings, meter film-speed calibrations from ASA 10 to 3200, single-stroke lever-advance mechanism, and an especially quiet shutter-release button. The Regula IIId is equipped with a 50-mm *f*/2.8 Color Ennit or 50-mm *f*/1.9 Color Ennalyt lens. Other interchangeable lenses will encompass focal lengths from 28 to 200 mm. Price and availability information not yet released.

THIS YEAR'S 35-MM AVALANCHE

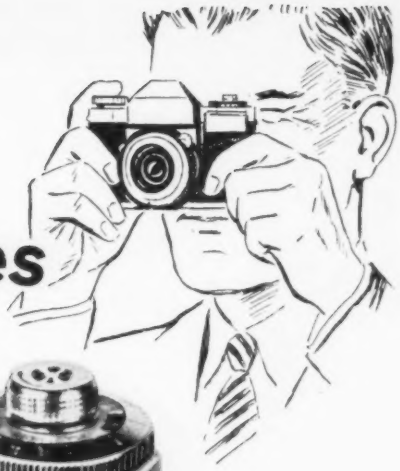
MPDFA witnessed the usual avalanche of new 35-mm equipment (which has become as much an annual event as the show itself) despite the shadow of *Photokina* (only six months away) which led many of the West German firms to stand pat for the moment. Here's a rundown on what we saw:

NIKON introduced the new S3 camera (See *What's New* story on page 44) and a host of accessories ranging from a spectacular Extension Unit for the Nikon SP with motor drive that permits the camera to be held from 20 inches to four feet over the heads of a crowd, with picture framing accomplished with a double-mirror periscope system. A very ingenious Electric Field Illuminator clips into the SP camera's accessory shoe, positioning a pen-light-powered light source over the camera's frame-line mechanism to provide bright frame lines for the 50-85-105-135-mm focal lengths even when shooting in total darkness. (With flash, natch.) An automatic Panoramic Head

has click-stop positions for 360-degree circling with any focal length from 28- to 135-mm, insuring required overlap and providing surprising ease of operation, ($30 with case). A little spirit-level clips into the accessory shoe for use with the Panoramic Head, wide-angle lenses, or any tripod usage ($3). The new Repro Copy outfit, model PA, is a complete redesign of the previous unit with additional features squeezed into a considerably smaller package ($199.50). A volt-meter with tapered prong for momentary contact (to avoid battery drain) is supplied for SP motormen at $8.50. A series of diopter correction disks for the SP and S3 are available in half-diopter steps for spec-wearers who want to use the camera without glasses. They're $3.50 each for the SP, $2.50 for the S3. Announced but not shown was a 135-mm

SEE WHY

you'll get finer pictures



Maytime is picture time

ZEISS IKON

Made in West Germany

Your Zeiss Ikon dealer can quickly show you why Contaflex will give you finer results in color and black-and-white.

Sight and focus directly through the lens of the camera with its unique view-finder. That BIG, bright view you get is the answer to composing pictures quickly, or framing fast-moving objects. And in the center of the view-finder, you have both a ground-glass and a split-image rangefinder for fast, accurate focusing.

CONVERTIBLE LENSES

on models III, IV and on the new budget-priced alpha and beta models permit the use of quick-change wide-angle and tele component lenses. And models I and II are available with a tele attachment lens. No parallax problems ever!

See Contaflex—at leading dealers. Write for booklet.

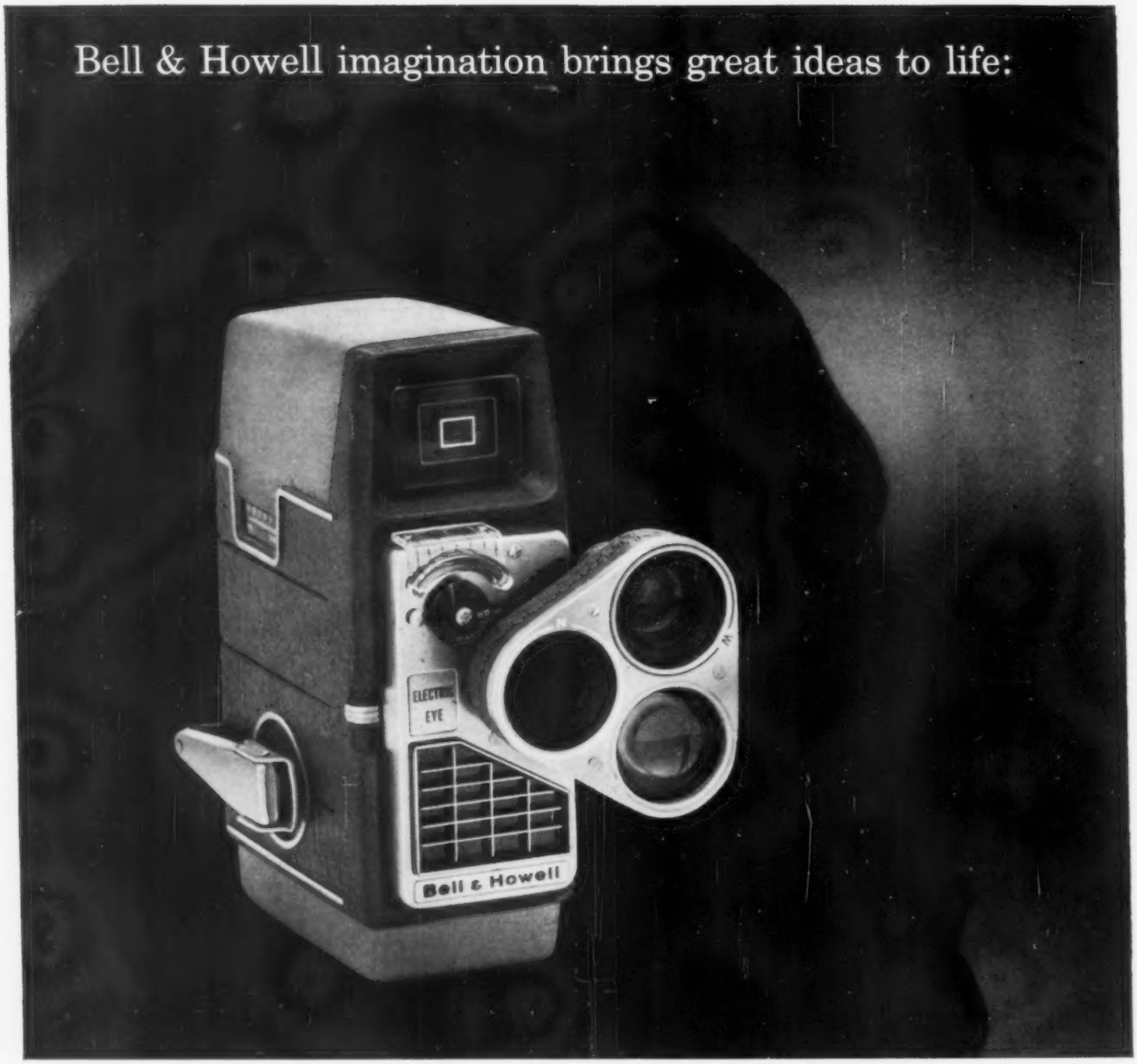
CARL ZEISS, INC., 485 Fifth Avenue, New York 17

WIDE-ANGLE and TELE COMPONENT LENSES

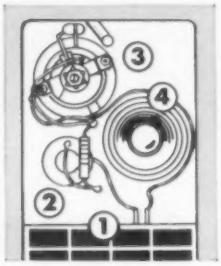
available for Contaflex III and IV and for the new budget-priced alpha and beta models.

Contaflex

The spectacular 35mm single-lens reflex



New Electric Eye turret camera sets its own 3 lenses!



How the Electric Eye sets itself: (1) Electric Eye is energized by light. (2) Thermistor compensates for temperature. (3) Computer analyzes electrical flow. (4) Iris adjusts instantly, automatically.

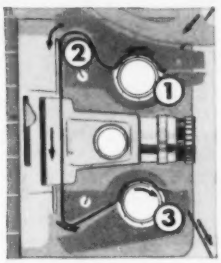
Bell & Howell pioneered the self-setting Electric Eye (1956) and now brings you two major improvements.

The first is in the re-designed Electric Eye itself. The new models (like the 393 shown above) not only set their own lenses, but automatically adjust to natural and artificial light. It's all done by the new *Solar Grid* —an exclusive new kind of Electric Eye. No mechanical adjustments are required. And the new Solar Grid also deflects extraneous light from top and sides when filming back-lighted subject. Film is exposed for direct lighting on subject, not over-all light.

The second innovation is in the all-new Safeguard Turret, featuring 3 lenses enclosed in a *single unit* of die-cast aluminum. It is stronger, more protective and far more compact. With the one piece housing, lenses are pre-aligned with hairline accuracy. The 6:5mm wide angle lens gives 85% more picture area than other wide angle lenses! See the 393 Turret model at your dealer's. $159.95 . . . as little as $16.00 down.

Single lens models start as low as $99.95... as little as $10 down

New Auto-Load projector threads itself in 3 seconds!



How the Auto-Load threads itself: (1) Film goes into opening slot. (2) Automatic loop formers carry it thru the film path. (3) Film emerges completely threaded, ready for quick placement on take-up reel.

This is the world's first and only 8mm projector with automatic threading. It's the perfect partner for the Electric Eye camera!

All you do is place the film in the slot. The New Auto-Load threads the film in just 3 seconds! No fumbling, squinting or poorly formed loops. The Auto-Load threads itself *perfectly* every time! An automatic loop-setter reforms loops with a touch of your finger. It's faster, safer, more accurate than conventional threading! *Other advanced features:* new knob focus, new DAK 500W lamp for brighter image, gear-driven reel arms, reverse and still, 400 ft. capacity (full half hour showing), straight line optics.

And ZOOM LENS too—exclusive *Filmovara* lens zooms picture to fit the screen, fills screen even in small room. *Auto-Load 353,* only $129.95 . . . as little as $13 down. With Filmovara lens, $149.95 . . . as little as $15 down. Write Bell & Howell, 7106 McCormick Road, Chicago 45.

Bell & Howell

FINER PRODUCTS THROUGH ***IMAGINATION***

now! a twin-lens reflex with interchangeable lenses

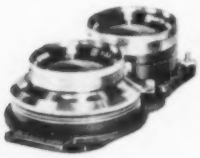
Interchangeable lenses, the 25 year dream of twin-lens reflex enthusiasts, is now a reality! The remarkable new Mamiya C Professional permits you to use normal lenses for conventional shooting — long focus and telephotos for portraits, for candids, news and travel, for greater detail with distant subjects.

Your camera dealer is now featuring this significant new twin-lens reflex. Be among the first to try it.

$159.50 with matched 80mm f/2.8 lenses
105mm f/3.5 lens-shutter assembly $89.50
135mm f/4.5 lens-shutter assembly $99.50

FEATURES: Focuses down to 7" with 80mm lenses; 9 shutter settings —from 1 to 1/400 second and bulb— with M and X synch in each lens-shutter assembly; semi automatic film advance with auto-stop; field-lens focusing screen; removable, self-erecting focusing hood with magnifier and eye-level sports finder.

For complete details, write: Dpt. PP-6, Mamiya Division, Caprod Ltd., 251 Fourth Avenue, New York 10, N. Y. *In Canada:* Precision Cameras of Canada, 77 Vitre Street W., Montreal.



NEW MAMIYA 'C' PROFESSIONAL

Other Mamiya Products include: Mamiya Magazine '35' with interchangeable film backs; Mamiya 16 Subminiature; and the Mamiya Automatic 6.

PHOTO SHOW continued

f/4 Nikkor in a short mount for macro work that'll list for $120.

ZEISS IKON added two new Contaflexes to their line bringing the total now available to six, with pricing from $126 to $199. The newcomers are the Contaflex Alpha with 45-mm Convertible Pantar f/2.8 lens for $126, and the Beta with the same optics and Prontor Reflex shutter plus a built-in exposure meter for $149. Also introduced was the budget-priced Contina I with 45-mm Novicar f/2.8, Prontor SVS shutter to 1/300, single-stroke lever, and large viewfinder for $49.

BALDESSA Ia and Ib (with built-in meter) are two handsomely styled little 35's with 45-mm f/2.8 Baldinar lenses, Prontor SVS shutters to 1/300, parallax-corrected illuminated-frame-line finders, coupled rangefinders, drop-in film loading and a very novel high-speed winding key

mounted on the bottom of the camera on the right which enabled us to snap better than two frames per second on our first try. One effortless turn of this spring-loaded mechanism transports the film, re-sets the shutter. Beautifully styled in streamlined but functional bodies, the two Baldessas are extremely noteworthy little 35's. The Ia (no meter) sells for $59.59, the Ib (built-in Gossen meter) for $79.95.

VOIGTLANDER introduced another cute little handful in their Vito BR which features coupled-rangefinder combined with 1:1 viewfinder, Prontor SLK shutter to 1/300, 50-mm f/2.8 Color Skopar lens, single-stroke advance and a lot of rugged construction for $89.50. Also shown was a new 135-mm f/4 Super Dynaret lens for the Vitessas with automatic red-index depth-of-field markers and leather covering for $89.50.

BRAUN cameras introduced at the show in addition to the Paxette Super III (See *What's New* page 58) are the Super II L and Super II BL with screw-in lens mount (instead of Super III bayonet), coupled rangefinder, plus most other III features. With f/2.8 lenses the II L is $79.95, the II BL $99.50. With f/1.9's they're $109.95 and $129.95. A variety of interchangeable lenses are available, more are on the way, and latest MPDFA arrival is the Tele Ennalyt 200-mm f/4.5 in bayonet for the III or screw-threads for the II, at $149.50.

PETRI (See *What's New* story on Petri 2.8 and 1.9 Automate cameras, page 50 and 54) garnered considerable attention with a new f/1.9 model listing for $69.95.

COMPARE

–any other claim

–any other camera

–any other price . . .

This is truly the most Fantastic Camera Value Ever Offered...

Outstanding precision craftsmanship . . . unexcelled quality . . . exceptionally beautiful body design . . . and an incredibly low price . . . that make other cameras obsolete! There has never been anything like it! Petri sets a new standard of quality and price by which other 35mm cameras will be judged.

PETRI f1.9 Super $69.95

CHECK THE QUALITY FEATURES POINT BY POINT

✓ **THE LENS:** Six element superfast f1.9/45mm Orikkor, highly color-corrected and amber coated, assuring infinitely finer picture quality, superior definition and exceptional color fidelity.

✓ **THE SHUTTER:** Famous Copal MXV shutter, fully synchronized for flash and strobe with built-in selftimer and click-stop speeds from 1 sec. to 1/500, plus B.

✓ **THE FILM ADVANCE:** "Speed-O-Matic" four-way action lever advances film, sets shutter, counts exposures and protects against double exposures in one single rapid stroke; double clutch feature assures instant readiness for fast successive shots.

✓ **THE RANGE/VIEWFINDER:** Bright single window coupled range/viewfinder with "Golden Gleam" frame and parallax correction marks assure perfect composition and sharp focusing on fastest action shots.

✓ **OTHER FEATURES:** Rapid rewind handle . . . exposure counter with automatic "zero" resetting . . . extended pressure plate for perfect film positioning . . . film type indicator . . . satin chrome finished body and smart black leather finish . . . etc. **Leather Case $12.50**

PETRI f2.8 $49.95

Famous f2.8/45mm Orikkor 4-element lens, color-corrected, amber coated . . . Fully synchronized Copal X precision shutter with speeds from 1 sec. to 1/300 sec. & B . . . "Speed-O-Matic" single stroke four-way action advance lever . . . brilliant single window coupled View/rangefinder . . . handy exposure guide . . . helicoid focusing lever, etc.
Leather Case $9.95

PETRI f1.9 Automatic Seven element super-fast Orikkor f1.9/45mm lens, extra large brilliant single window range/viewfinder, Copal MXV precision shutter, speeds from 1 sec. to 1/500 & B. plus many other advanced deluxe features **ONLY $99.50.** Genuine leather case $12.50.

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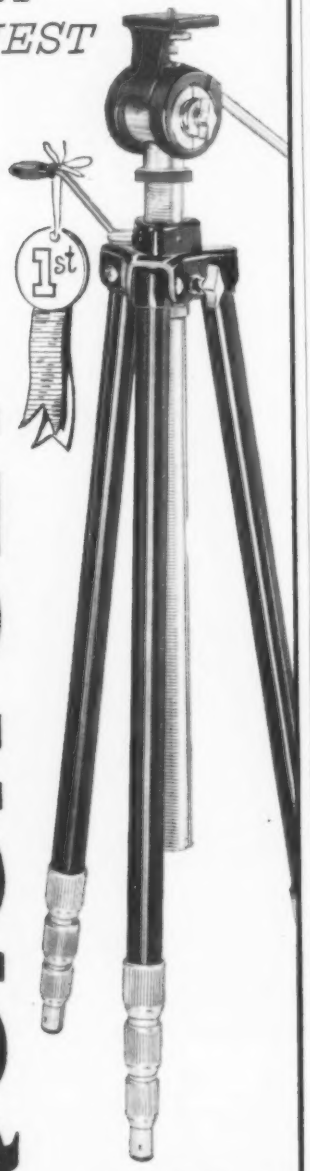

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PHOTO SHOW continued

The lens is a 6-element 45-mm *f*/1.9 Orrikor (the *f*/1.9 Automate lens is a 7-element, and the combined range- and viewfinder window somewhat smaller).

EDIXA REFLEX cameras are now being imported into the U. S. for the first time though the've been sold in the European and other markets for quite a few years. A single-lens reflex with automatic internal diaphragming, single-stroke advance lever, focal-plane shutter with speeds to 1/1000, MX synch, interchangeable prism and hood-type viewfinders, etc., the Edixa B lists at $179.50 with automatic Travenar 50-mm *f*/2.8, for $259.50 with Steinheil Auto Quinon 55-mm *f*/1.9. The Model C has a built-in meter, sells for exactly $25 more with either lens.

MAMIYA, whose Metramatic we've already covered, also introduced a non-automatic model, the Metra, with built-in meter, life-size etched-frame finder with automatic parallax correction, coupled rangefinder, Seikosha MFX shutter, rapid

wind and rewind, and 48-mm *f*/1.9 Mamiya Sekor lens. Clothed in a light-gray leather-covered body, the Metra sells for $109.50.

ARGUS introduced two new cameras, one modification. The new cameras are the Matchmatic (See *What's New* story on page 60) and the V-100, a West German-built camera with combined rangefinder-viewfinder, built-in meter, Synchro Compur shutter, rapid advance lever (at bottom), and a choice of lenses. With a 52-mm Cintar *f*/2.8 the V-100 sells for $109.95; with a 48-mm Cintagon *f*/2 it's $139.55. The modification involves the Argus C-44 which now has a double-stroke film-advance lever and a pop-up rapid rewind crank, at $99.95.

The **ASAHI PENTAX** has two new 35-mm wide-angle lenses, an *f*/2.3 retrofocus type and a conventionally designed *f*/4. Both the 83-mm *f*/1.9 and the 135-mm *f*/3.5 Takumar lenses have new lightweight black mounts with preset diaphragms, and the accessory line-up now includes a bellows focusing device, extension tubes, and a microscope adaptor.

OLYMPUS 35-S II, the latest member of the Olympus family of 35's, is a $79.95 unit with a 48-mm *f*/2.8, combined range-viewfinder with illuminated frame-lines plus automatic parallax correction, short (120-degree) stroke advance lever, folding rapid rewind crank and Seikosha MFX shutter to 1/500 second.

TOPCON REFLEX. A minor sensation was aroused by the unheralded introduction of this single-lens prism-reflex with instant-return mirror (previously available only in the Asahi cameras), focal-plane shutter speeded to 1/1000 sec, interchangeable viewfinders, single-stroke

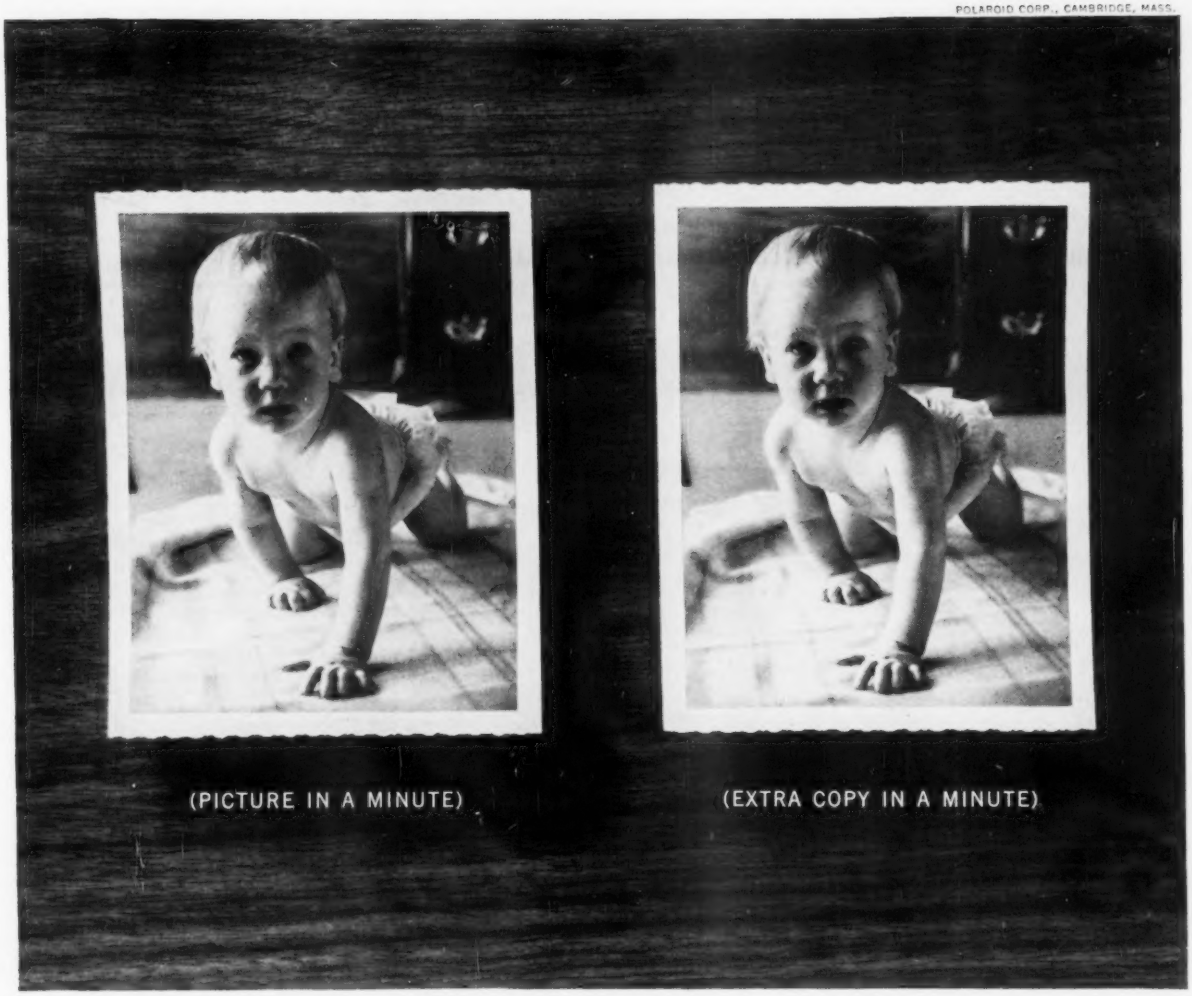
advance lever and rapid rewind crank. The Topcon-R will sell for $269.50 with 58-mm *f*/1.8 Auto Topcor lens, and a 35-mm Auto Topcor *f*/2.8 retrofocus wide-angle will sell for $139.50. Tokyo Optical Co., Ltd., makers of the Topcon-R also introduced their Topcon-L to this country, a $99.50 35-mm camera boasting an automatic parallax correcting 1:1 etched-line bright-frame view-rangefinder, LVS-coupled Selkosha shutter (top speed 1/500), 44-mm *f*/2 lens, and a commendable top-of-the-camera light meter that reads directly in exposure value numbers.

GRAFLEX announced three new changes in their Century 35 camera: an *f*/2.8 Prominar 48-mm lens (instead of the previous *f*/3.5), a floating etched-line viewfinder frame with parallax correction markers, and a second "ear" on the focusing wheel which now provides more convenient two-finger focusing. The camera lists at $64.50 alone, or may be obtained in kit form with case and Graflash B-C unit for $79.50.

SNEAK PREVIEW: Shown at the Japan Camera Industry Association booth, but not now being imported into the U. S., was the Auto Tera II B, a 35 with a remarkable film-transport system. A key on the bottom plate winds a spring which readies the camera for 12 shots. After each exposure the photographer flicks a finger lever on the left side of the lens barrel which releases enough spring tension to advance the film one frame and reset the shutter. A sort of semi-sequence camera, the Auto Tera looks mighty attractive.

NEW LENSES INCLUDED: 300-mm *f*/4 Pan Tele Kilar with rack-and-pinion focusing, 5-element Gauss construction, standard and close-focusing ranges built into mount plus adapters for almost all 35-mm cameras plus the Hasselblad. Price, $429 in wooden case. Konica is offering a 50-mm Hexanon *f*/1.9, also Leica mounted, at $124.75. Steinheil introduced a new Quinaron 35-mm *f*/2.8 with automatic diaphragming and announced that new lenses for the Braun Super and other cameras will all have the unique flash exposure calculator band. A 300-mm

POLAROID CORP., CAMBRIDGE, MASS.



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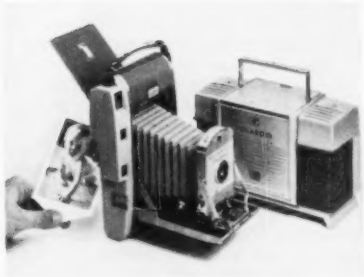
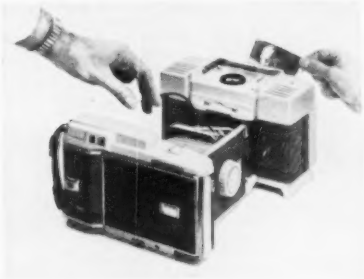
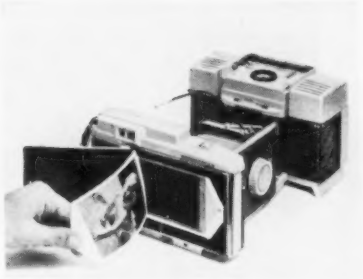
Extra Copies in 60 seconds!



1. The camera that gives you a picture in 60 seconds now gives you *extra copies in 60 seconds!* With this new Polaroid Print Copier, you can make excellent *duplicates* yourself, right in your living room, instead of having them done on the outside.



2. Simply slide your original snapshot into place inside the Print Copier, slip your Polaroid Land camera into position, and you're ready to take "a picture of your picture." (The Print Copier has its own built-in copying lens, lights, timer.)



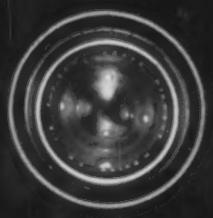
3. 60 seconds later, flip open your Polaroid Land camera and pull out a sharp duplicate print! It's that easy. And it means *everybody* in the picture can get his own copy right then and there. Available for all Polaroid Land cameras. $29.95

Your OLYMPUS is the most beautiful camera ever designed—at any price! It has dozens of exclusive features. These are a few:

You look through ONE window to focus, compose simultaneously. You see a brilliant Golden Frame surrounding the subject. This Frame actually MOVES as you focus! It keeps the subject centered and automatically corrects for parallax, whether you are inches or miles from the subject!

Your finger quickly catches the rapid sequence lever. A short fast stroke—ONLY 120°—automatically winds the film, counts the exposure, prevents accidental shooting, cocks the MFX shutter. If you like make 36 exposures in 36 seconds!

You glance at the Exposure Dial on the camera back, set the OLYMPUS DUAL MOVEMENT Light Value System on the lens barrel. Striking white numbers appear against the black barrel. You see all speeds—through 1/500—instantly. You see all scale settings from the top position.



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OLYMPUS TOKYO

PHOTO SHOW continued

f/4.5 Tele Quinar has 5-element construction, horizontal or vertical camera-turn stage, plus ability to adapt to an incredible variety of cameras and applications including focusing bellows when removed from mount. Schneider has released a whole series of new lenses with a new system of positive depth-of-field control based upon a pair of sliding plastic bands

which automatically indicate the depth of field for any aperture and focusing distance. First two Schneider lenses to have the new system are the "Stopomatic" Xenon 50-mm f/1.9 and the Curtagon 35-mm f/2.8.

Zunow has released a new 100-mm f/2 long lens priced at $179.50 and a new 35-mm f/1.7 wide-angle at $145; both in Leica screw-type mounts. Two new Exakta lenses by Isco are 135- and 180-mm f/2.8 long-focus objectives in lightweight black mounts with preset diaphragms. A new addition to the Alpa Reflex line is a 35-mm f/3.5 Schacht Alpagon with automatic diaphragm priced at $109.

WHAT'S NEW IN ROLL-FILM FORMAT

Activity in the roll-film format fell noticeably below even the poorest past performance with only two really new cameras, and most news being made by the accessories. The two cameras, both twin-lens reflexes and both by Yashica, are the new models 635 and 44. The Yashica 635 is an externally conventional camera, the gimmick being an internal conversion kit for switching from 120 roll film to 35-mm cassettes. With a Yashikor 80-mm f/3.5 lens and a 9-speed Copal MX shutter, the 635 retails for $69.95 complete with leather compartment case and kit.

The Yashica 44 is a miniaturized twin-lens reflex in the format first introduced by the 4x4-cm Sports Rolleiflex years ago, and repopularized at last year's IPEX show with the "Baby" Rolleiflex. The Yashica 44 also utilizes the 4x4-cm format to produce 12 1⅝x1⅝ pictures on a roll of 127 film. With a 60-mm f/3.5 Yashikor lens, a Copal shutter to 1/500 second, and a film-transport crank handle which flips back into position when released, the price is $59.95.

Three new Rolleiflex accessories introduced at this show are a universal Rollei pan head which may be used with both the 6x6 and 4x4 Rolleiflex, an elegant leather binocular focusing hood which snaps firmly onto the Rollei's side-bars to provide a slightly magnified groundglass

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In fact, every feature of the new DR has been designed for *fast action* accuracy, to provide *active* photographers and travelers with a complete, dependable meter in the smallest, most convenient package possible, and at lowest cost. It's the *sure* way to better pictures . . . dramatic color. See it at dealers today.

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image (which is viewed with both eyes) free of extraneous light, and a new Rolleinar 3 for parallax-free close-ups with the subject 9½ to 12½ inches from the camera. Previously, the strongest Rolleinar available was the No. 2 which covers a focusing range of 12½ to 20 inches.

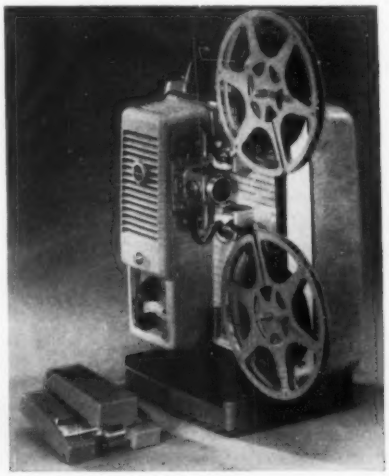
New accessories for the Hasselblad 500 C some of which had been previously announced, but none seen before this show included: a rapid-wind crank which bayonets onto the camera in place of the standard (or special exposure meter) knob, a quick on-off tripod accessory which attaches to the tripod head and accepts the machined rail on the bottom of the camera so that the Hasselblad may be mounted or removed in a trice (a locking-lever seems to weld the camera to the attachment), a leather bellows-type microscope adaptor for the 500 C Series VIII adapters which bayonet onto all 500 C lenses to permit the use of standard filters of any make, and a set of six decamired color-balancing filters: R 1.5, R 3, R 6, B 1.5, B 3 and B 6.

A new lensboard with matched 180-mm *f*/4.5 Mamiya Sekor taking and viewing lenses was issued for the Mamiyaflex C interchangeable twin-lens reflex. This lensboard assembly, which will not be immediately available, is the fourth to be announced for this camera, and is equipped with the same Seikosha shutter having nine speeds from 1 to 1/500 second and full MX synchronization.

NONAUTOMATED MOVIE NEWS

Proof that not all movie news is in the super-simplified field of electric-eye cameras is given by the following sampling of new movie equipment.

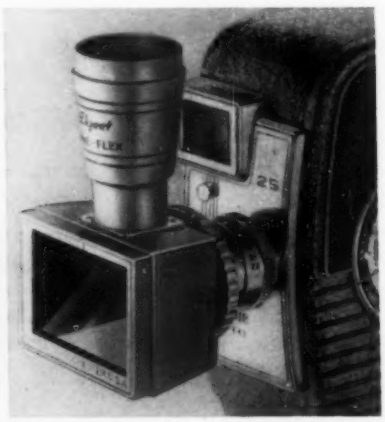
Noteworthy new projectors included the Argus M-500 (See *What's New*, page 154) and the self-threading Bell & Howell Auto Load (See *What's New*, page 154). Another low-priced item in this field is the Keystone Sixty, an 8-mm projector with a 500-watt lamp, vernier focusing, 300-foot reel capacity, and compact luggage-type case for $64.95. The Kodak Showtime 8 projector is now available in a 750-watt model using a short-focus (¾ inch) *f*/1.6 projection lens to cover a five-foot screen from close room-size distances with "big-screen" quality. A Presstape splicer (see below) is built into the Showtime 8 which, incidentally, costs $174.50.



To prove that the more fortunate have not been forgotten, both Kodak and Bell & Howell have come out with new high-quality 16-mm projectors in the high-price brackets. Eastman's entry is the Pageant Sound Projector Model 8K5 whose outstanding feature is an 8-watt amplifier which covers frequencies in the 5-to-7,000 cycles per second range with a 6-by-9 inch oval speaker housed in a baffled enclosure, and a list price of $429. The new Bell & Howell Filmosound 385 has a 15-watt amplifier, built-in voltage regulator, and factory-sealed lubrication of all moving parts to eliminate any need for future oiling. The Filmosound is offered in several variations priced from $499.95 to $629.95.

Elgeet introduced two obviously well-thought-out kits for titling, creating special effects, or for handling any copying or other close-in work with amateur motion picture cameras. The basic kit is the $29.95 Titalist and is built around a horizontal titling bar with camera mounting bracket, 6x8-inch titling easel to accommodate 8-mm cameras with lenses as short as 10-mm, and the Elgeet Opto-Aligner to permit optical centering of the easel. A companion animation kit, the $49.95 Animator offers such professional touches as a turntable and a rotary drum, as well as an auxiliary easel board with spring-clips to hold flat copy in place. The Animator and Titalist kits can be integrated to handle just about any titling problem (including even rear-screen projection), and as the manufacturer points out, the equipment may even serve as a 35-mm copy stand.

To really travel first-class, however, Elgeet also offers the Cineflex-Reflex viewer and opto-aligner which eliminates



parallax, permits more convenient sighting, and includes close-up lens and a filter holder. Two models are available, one for 8-mm cameras, the other for 16-mm equipment, both priced at $9.95.

The Kodak Presstape Splicer is a new

Konica III Shattered the Fable that a Luxury Camera Must Cost Over $300!

Now...

KONICA III is BETTER THAN EVER!

When Konica III was introduced, it revolutionized the industry by upsetting the traditional high cost of owning a luxury "35". How did we accomplish this? By simply *eliminating* the one feature so rarely used, but so heavily paid for—*lens interchangeability!* In every other pertinent respect, Konica III embodied *all* the precision details and luxury features of its $300 counterparts.

But new Konica III is *even better than ever!* We've added the new MXL light-value shutter (a single number sets everything!), and a bigger, brighter view-rangefinder with a rectangular viewing window and bright field outline. If you think the original Konica III made history, wait until you see *this* model, at your Franchised Dealer!

With These Important "Firsts"!

1. **First!** Light Value MXL Shutter; speeds to 1/500th second and full synchronization, even with built-in self-timer!
2. **First!** Rectangular range-viewfinder eyepiece, brighter because it's bigger and the same shape as your film frame!
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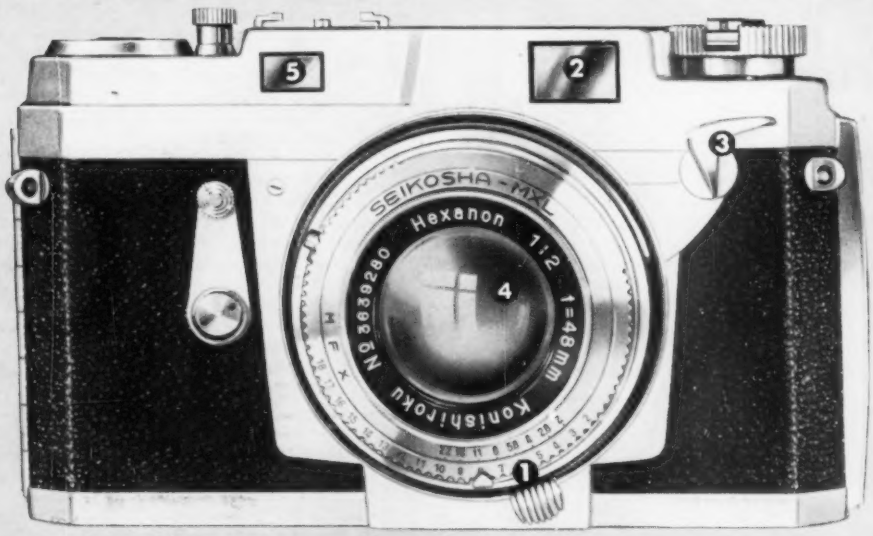
4. **First!** Highest resolution 6-element Hexanon f:2 lens, worth the price of the complete camera itself!
5. **First!** Complementary-colored range-finder image permits accurate focusing even in the darkest areas in which you can use your high speed lens!



Other cameras may have some of the Konica III features, but Konica's integration of all these features puts it in a class by itself!

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dry splicer which cuts notched sections out of each end of the film to be repaired, after which the break is held tightly together and a small piece of Kodak Presstape is applied to both sides of the film. In a matter of less than a minute later, the splice is ready to run through your projector. The Presstape Splicer sells for $6.95, and comes with 10 8- and 10 16-mm Presstapes. Packets of 20 Presstapes sell for 50 cents for either 8- or 16-mm.

New 8-mm camera equipment worth noting includes the Yashica 8, 8T, and 8T 2, spool-loading cameras with ratchet winding and zoom-type viewfinders. The Yashica 8 with f/1.9 lens lists for $49.95; the 8T with an f/1.4 is $79.95, and the 8T2 with two-lens turret of f/1.4 lenses is only $119.95. The 8T and 8T2 feature 7 speeds from 12 to 64 frames per second. An addition to Kodak's low-priced line is the Brownie Turret f/2.3 which goes for $59.50. A camera you can't buy, at least not yet, is the Arco 8 which we found among the unimported exhibits at the Japan Camera Industry Association booth. An extraordinarily well-built 8, the Arco has an air of quality about it . . . when running the shutter is almost inaudible. Features include footage-scale visible through the viewfinder eyepiece as the camera is run, 3-lens turret with rackover focusing, 8-to-64 frames per second, and a built-in (but not coupled-to-camera) light meter.

SLIDE PROJECTORS

Slide-projector manufacturers hit the show with an interesting variety of new products ranging from simplified, economy models to powerful and complex automatic projectors. POP PHOTO readers already are familiar with the Realist 400 and 400-Automatic, two inexpensive ($22.50 and $29.95 respectively) projectors designed primarily for owners of low-cost 127 and 35-mm cameras, and Kodak's handsome, unusually styled Cavalcade, which at $149.50, features an up-and-down slide-changing system, optional 500- or 300-watt output, and just about every combination of automatic, semi-automatic, and manual slide-changing operation imaginable.

Kodak also introduced a new 500-watt big brother of the Kodak 300 model. Like the 300-watter, the 500 is available with either the Kodak Readymatic Changer or an automatic magazine changer. It accepts 35-mm, Bantam, or Super-Slides without changing condensers, has a four-inch f/3.5 Ektanon lens, and is priced at $74.50 with Readymatic, $84.50 with automatic magazine.

The attention to styling and eye-appeal evident in so many new photographic products in recent years is reflected in Revere's new 503 and 505. Both these compact models utilize magazine trays and intermix all types of 2x2-inch mounts (with an accessory condenser lens available for Super-Slide projection). Both Reveres offer manual and automatic-sequence slide-changing, a Wollensak 5-inch f/3.5 lens, a pointer, and a leveling control. The 503, with a 300-watt projection

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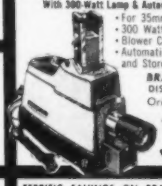
BRAND NEW! FULLY AUTOMATIC!

With 300-Watt Lamp & Automatic Changer!



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35mm CAMERAS	List Price	I Want to Spend About
Argus C44, f2.8 Coated, Synch. Case & Gun	$117.00	____
Canon VT, f1.8 Coated Serenar, Synch	323.00	____
Konica III-MXL, f2 Coated Lens, Synch	124.75	____
Minolta A2, f2.8 Coated Lens, Synch	69.95	____
Nikon SP, f1.4 Coated Nikkor Lens, Synch	415.00	____
Kodak Retina IIIC, f2 Ctd. Synch, B.I.M	165.00	____
Olympus 35S, f1.8 Coated Lens, Synch	114.50	____
Zeiss Contax IIA, f1.5 Ctd. Sonnar, Synch	318.00	____
Asahi Pentax Reflex, f2.2 Coated, Synch	199.50	____
Zeiss Contaflex IV, f2.8 Ctd. Syn, B.I.M	199.00	____
Exakta VXIIA, f1.9 Coated Lens, Synch	399.00	____
Praktina FX, f2 Auto. Biotar, Synch	297.50	____
2¼ x 2¼ REFLEX CAMERAS		
Rolleicord VA, f3.5 Coated Xenar, Synch	124.55	____
Auto. Rolleiflex, f2.8E Xenotar, Synch	331.50	____
Minolta Autocord L, f3.5 Ctd. Syn, B.I.M	124.50	____
Auto. Yashica Mat, f3.5 Coated, Synch	75.50	____
Mamiya Pro. Reflex C, f2.8 Coated, Synch	159.50	____
60-SECOND CAMERAS		
Polaroid Model 80A, Pocket-Size, Synch	72.75	____
Polaroid Model 95B, Flash Synchronized	94.50	____

8mm MOVIE CAMERAS	List Price	I Want to Spend About
Revere 40, f2.5 Coated Lens	104.50	____
Kodak Brownie Turret, f1.9 plus W.A. & Tele	79.50	____
Revere CA2, Electric Eyematic, 3-Lens Turret	169.50	____
Keystone K27 Turret, f1.9 plus W.A. & Tele	99.95	____
8mm MOVIE PROJECTORS		
Kodak Brownie, 500-Watt Lamp	79.50	____
Keystone K100M, 500-Watt Lamp, f1.6 Lens	99.95	____
Keystone K109D, 750-Watts, f1.6 Splicer	169.50	____
Revere P85D, 500-Watt Lamp, f1.6 Lens	124.50	____
16mm MOVIE PROJECTORS		
Ampro Stylist, Sound/Silent, 1000-Watt	419.85	____
Keystone K161M, 750-Watt Illumination	169.50	____
Revere Model P48, 750-Watt	182.50	____
EXPOSURE METERS		
G.E. Model PR-1, With Carrying Case	34.50	____
Weston Master III, Very Latest Model	32.50	____
Argus L-3 Meter, Complete with Carry Case	16.95	____

TAPE RECORDERS	List Price	I Want to Spend About
Revere T700D, Two-Speed, Dual-Track	$225.00	____
Wollensak T1500, Two-Speed, Dual-Track	189.50	____
Mohawk Midgetape, Pocket Size Model	249.50	____
SLIDE PROJECTORS		
Argus 300, 300-Watts, Automatic Changer	62.50	____
Bausch & Lomb Balomatic, 300-Watt Lamp	84.50	____
Keystone K500D, 500-W. Automatic & Remote	104.95	____
Realist 620, 2x2 & 2¼x2¼, 300-Watt	39.95	____
ELECTRONIC FLASH		
Braun Hobby Automatic, Portable & Compact	106.00	____
Mighty Light Standard with 'D' Pack	32.95	____
Heiland Model 62A, A.C. and Battery	59.95	____
Ultrablitz Jet II, Compact & Lightweight	69.95	____
ENLARGERS		
Federal 290, 35mm—2¼x3¼, 3½" f6.3 Lens	43.95	____
Federal 450, 35mm—4x5, 5½" f4.5 Lens	125.95	____
Omega D2, 35mm—4x5 Condenser Model	214.50	____
Besseler 45M, 8mm—4x5 Condenser Model	259.75	____

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☐ IF NOT OBTAINABLE, SUBSTITUTE CLOSEST MATCH!
☐ KEEP $1.00 ON DEPOSIT UNTIL AVAILABLE!
☐ IF NOT AVAILABLE IN 10 DAYS, RETURN DEPOSIT!

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ALL ITEMS SUBJECT TO PRIOR SALE! — 1 YEAR SERVICE!
ADD SHIPPING COSTS. EXCESS REFUND C.O.D. 10% DEPOSIT!

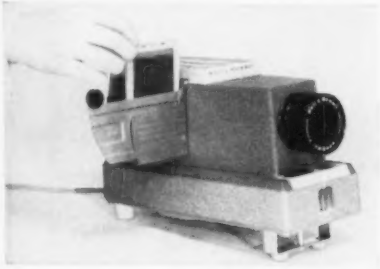
MILLIONS of satisfied PEERLESS Customers Can't Be Wrong!

- $35.95 . . . fits most projectors accepting Model P Airequipt Changers.
- Operates electrically by itself—by push button—by remote control.
- Time cycle selector provides six settings from Rapid Change to about 30 seconds.
- "Hold" button will keep any slide on screen indefinitely.
- "Instant Change" button changes slides independently of selected time cycle.
- Automatically engages follow-up magazines for continuous showing.
- Remote control: electric-$9.95; pneumatic-$3.95.

Airequipt Mfg. Co. Inc., Dept. P6, 20 Jones Street, New Rochelle, N.Y.

lamp, is priced at $59.50; the 505, with 500 watts, at $69.50.

A new addition to the Bell & Howell line which attracted considerable interest is the versatile 708 Headliner Duo, an inexpensive projector which handles all



four popular color-slide formats—2¼x2¼, Superslide, Bantam, and 35-mm—with the aid of a quickly-removable adapter which converts the changer to accept the smaller slides. With a 300-watt lamp and a 5-inch *f*/4 Trionar lens, the 708 Headliner is priced at $49.50. An optional lift-off carrying case is available at $5.95, and the 708 accepts both the Bell & Howell Semi-matic and Electric Changers. B&H also brought forth a souped-up Robomatic with 750-watt illumination—bright enough to project slides in a normally lighted room—and an improved model of the 500-watt Robomatic. Both are fully automatic machines which accept Superslides as well as 35-mm and Bantam slides. The 750 is priced at $169.95; the 500-watt model at $149.95.

Introduced to the American market for the first time is a precision slide projector in the European tradition, Agfa's Karator 55, with a 500-watt lamp, 155-mm *f*/2.8 lens, and an unusual exhaust fan which blows hot air out the bottom of the projector. The Karator handles 2x2-inch slides, with a converter for 2¼x2¼ projection. The price is $149.50, and the following accessories are now available: a 250-mm *f*/4 lens, a micro-slide holder with 20-mm *f*/1.6 lens, and a semi-automatic slide holder with tray.

Tech Photo Products introduced the Tech Tapesync, a device for operating slide projectors automatically in synchronization with a tape-recorded commentary. It works with any powered, automatic slide projector or accessory unit such as the Airequipt Electro-Changer. The Tapesync itself is attached to the side of the tape recorder. The standard model, $15.95, connects to the projector with a mating cord; an electronic (radio remote-control) unit, $49.50, requires no connecting wires between projector and Tapesync.

The Yankee Slide Changer now is available in a 2¼x2¼ model for use in the Bell & Howell Duo, the Viewlex V53, or the Golde Reflex. As in the previous 2x2-inch model, a rotating lever changes slides, advances or reverses the slide tray as you wish. Price, with 24-compartment tray, is $19.50.

Brumberger introduced two new Royal Automatic slide projectors with 300-watt

continued on page 122

IMAGINE... a camera with a BRAIN!

"wonder window"
figures, sets **by itself** for the greatest color & black-and-white you'll ever shoot.

light-meter pointer...
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WHEN THEY BECOME ONE...FIGURING'S DONE

BRAUN 35 mm Paxette-automatic Super III

interchangeable lenses—from 35mm to 200mm!

BRAUN builds a brain into its great *automatic* camera... you just twist a ring and you're ready to shoot. Makes meter-juggling old fashioned. Saves precious seconds when *light...look...* and *color* are the way you want them!

- *Ends figuring f-stops*
- *Ends figuring light-value numbers*
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- *Ends "EXTRA" purchases, all-in-one!*

LUMINOUS FRAME-FINDER . . . LETS YOU COMPOSE
Gives you clear image contour for 4 different focal lengths including 135mm.

ALSO SEE: PAXETTE SUPER II-L ...brightline viewfinder, rangefinder, interchangeable lenses .....$79.95 with f/2.8 lens

PAXETTE Super III . . .
automatic light meter/viewfinder,
with f/2.8 BRAUN Color-Ennit 50mm lens only **$149.50**
with f/1.9 BRAUN Color-Ennit, $179.50
Eveready Case . . . $10.95

MORE "EXTRAS" IN PAXETTE

- *Interchangeable lenses—4 to choose from—coupled with rangefinder*
- *Prontor SLK shutter up to 1/300 sec.*
- *Rapid film transport*
- *Double exposure prevention*
- *Fast bayonet lens mount*

ACCESSORY LENSES for PAXETTE automatic Super III

BRAUN Lithagon	35mm f/3.5	$69.50
BRAUN Ennlyt	90mm f/3.5	69.50
BRAUN Ennlyt	135mm f/3.5	74.50
BRAUN Ennlyt	200mm f/4.5	149.50
Finder for 200mm lens only		9.95

(all prices for lenses include leather case)

ASK FOR THE "CAMERA WITH A BRAIN—PAXETTE'S THE NAME"

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LATEST MODEL

Exa mx Outfit

Includes new latest Exa mx with 50mm f2.8 ctd. Westar click-stop lens, penta prism finder, split-image rangefinder insert, Exa extension tube set, Exa B. C. flashgun, leather case.

List Price $216.50

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50mm f3.5 Zeiss Tessar instead of Westar, add	$12.90
50mm f2.8 Automatic Westenar instead of Westar, add	32.90

SPECIAL!

35mm f3.5 Optimar pre-set W.A. lens. Reg. $99.50, now only	49.95
35mm f2.5 Optimar pre-set W.A. lens. Reg. $120.00, now only	59.95

Contaflex Outfits

CONTAFLEX OUTFIT—Save $102.00!
Famous Zeiss Camera with Tessar f2.8 lens, automatic diaphragm, one telephoto or wide angle attachment and adaptor ring, eveready case, BC flashgun, filter, sunshade.
List Price $252. or $16.00 down SPECIAL $160

CONTAFLEX II—Save $93.00!
List Price $273. or $18.00 down SPECIAL $180

CONTAFLEX III—Save $95.00!
List Price $275. or $18.00 down SPECIAL $180

CONTAFLEX IV—Save $88.00!
List Price $288. or $20.00 down $199.50

Exakta VX IIA Outfit

ONLY 39.95 down
or $399.00

With automatic 58mm f2 Biotar, or 55mm automatic f1.9 Quinon, Kent B.C. Fan type Flashgun, Pentaprism Rangefinder, 135mm f3.5 Telephoto, photo electric exposure meter, extension tube set, and Eveready Case and gadget bag.
List Price $550.00

NEWEST SINGLE LENS REFLEX!

Asahi-Pentax

With 50mm f2.2 Takumar Lens plus 35mm f2.5 Optinar Lens, 135mm f3.5 Lens, BC Fan Type Flashgun, Exposure Meter, Set of Extension Tubes, Case, Gadget Bag.
List Price $440.00

ONLY $30 down
or $290.00

BRAND NEW! NEW DESIGN! SAVE $52.50!

Retina Reflex

with f2 interchangeable lens List Price $220.00

ONLY 16.75 down
or $167.50 cash

JUST ARRIVED

New Aires 35 IIIC

With brilliant trimming type single rangeview finder, automatic parallax correction, f1.9 lens and selftimer. Complete with Eveready Case, Kent Flashgun, Exposure Meter, Filters, Sunshade and Gadget Bag.

ONLY 12.50 down
or $132.50

New Super Graphic 45 Outfits

Complete with Flashgun, 6 holders, Filmpack adapter, rollfilm, case, filters and sunshade.

	Cash	Down Payment
127mm f4.7 Optar	$495.00	$49.00
127mm f4.7 Kodak Ektar	$485.00	$48.00
135mm f3.5 Schneider Xenotar	$580.00	$58.00
135mm f5.6 Schneider Symmar	$490.00	$49.00
150mm f2.8 Schneider Xenotar	$610.00	$61.00
150mm f5.6 Schneider Symmar	$530.00	$53.00
152mm f4.5 Kodak Ektar	$499.50	$49.50
152mm f6.8 Goerz Golden Dagor	$545.00	$55.00
162mm f4.5 Optar	$514.00	$51.00
203mm f7.7 Kodak Ektar	$491.00	$49.00

Yashica 8mm Movie Camera

Rollfilm with twin lens turret complete with 1/2" f1.4 and 1 1/2" f1.4 Telephoto lens. Case, Movie Exposure Meter and 4 light bar.
List Price $160.00

ONLY 17.50 down
or $137.50

B & H Rollfilm 16mm Movie Camera

Complete with new Angenieux f2.2 Zoom Lens, 17mm to 68mm, with reflex through lens view finder; complete with case.

ONLY 60.00 down
or $600.00

WONDERFUL OPPORTUNITY! SAVE $92.00

Beseler Outfit

Complete for 35mm 2 1/4 x 2 1/4, 2 1/4 x 3 1/4 negatives, lenses, trays, thermometer, easel, paper and chemicals.
List Price $287.00

ONLY 19.50 down
or $195.00 cash

AMAZING NEW 1957

Bolex-16 Reflex

yours for as little as 27.97 down

	Cash	Down
Bolex C-8 Lytar f2.5	$ 89.95	$ 8.99
Bolex C-8 Lytar f1.9	119.95	11.99
Bolex B-8 Yvar f2.5	119.50	11.95
Bolex B-8 Yvar f1.9	149.50	14.95
Bolex B-8 VS Yvar f1.9	164.50	16.45
Bolex H-8 Leader, Lytar f1.9	229.50	22.95
Bolex H-8 De Luxe, Lytar f1.9	299.50	29.95
Bolex H-16 Leader, Lytar f1.9	229.50	22.95
Bolex H-16 Reflex, Pizar f1.5	482.50	48.25
Bolex H-16 Reflex, Switar f1.4	535.50	53.55

NEW NIKON S-3 AVAILABLE

Nikon SP

With Nikkor f1.4 lens. The camera with the universal viewfinder, parallax corrected plus the features of the S2.

JUST A FEW OF THE FINE NIKKOR ACCESSORY LENSES

	Cash	Down
Wide angle 25mm f4.0	$169.50	$14.15
Wide angle 35mm f1.8	179.50	15.00
Telephoto 85mm f1.5	299.50	20.00
Telephoto 105mm f2.5	152.50	12.20
Telephoto 180mm f2.5	399.50	28.65

ONLY 41.50 down
or $415.00 cash

Leica IIIg

With 50mm f2 Summicron lens. Newest Leica model with new bright-line viewfinder, parallax correction, automatic flash sync.

ONLY 30.90 down
or $309.00

Leica M3

With Dual Range 50mm Summicron f2 lens and optical viewing unit. This is the current model of the finest 35-mm camera, offered here at greatest value ever!

ONLY 35.00 down
or $456.00

OTHER LEICA LENSES & ACCESSORY PRICES ON REQUEST

Canon L-1 Outfit

Complete with 35mm f2.8 W.A., 50mm f1.8 normal and 135mm f4.5 tele. lenses, viewfinder, electronic flash unit, exposure meter and gadget bag. .... List $825.00

ONLY $45 down
or $440

BRAND NEW—SAVE $85!

Retina IIIc

With 35mm f3.5 Curtar W.A., 80mm f4 Longar Tele., Carrying Case, Kodak Standard Flash bracket, Retina Finder (35-80) and Retina Guide
List Price $330.00

ONLY 25.00 down
or $248.00 cash

LATEST 35mm SINGLE REFLEX

Edixa Reflex

Has Pentaprism rangefinder, interchangeable lenses, built-in electric exposure meter, Automatic diaphragm 55mm f1.9 Steinheil, Case, Kent Flashgun, Bellows Extension.
List Price $375.00

ONLY 29.50 down or $299.50

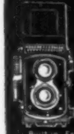
Yashica 44

Twelve pictures on 127 film, Super Slides, has f3.5 lens, with case, Kent-B.C. Flash, Exposure Meter, 4 filters and shade
List Price $109.60

ONLY 8.90 down
or $84.95

Ricoh Diacord "L"

TWIN-LENS REFLEX 120



ONLY 9.50 down
or $99.50

Built-in Exposure meter, f3.5 Selftimer, with case, Kent flashgun, filters, sunshade and gadget bag
List Price $125.00

B&H 8mm Electric Eye

Rollfilm camera with f2.3 lens. Has economy of 8mm film plus the ease and accuracy of completely automatic exposure.

ONLY 9.95 down

LATEST MODEL

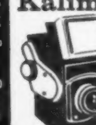
Hasselblad 500 C

2 1/4 x 2 1/4 single lens reflex with between the lens Syncro-Compour shutter, automatic diaphragm, interchangeable lenses, backs, viewer. With 80mm Zeiss Planar f2.8 lens.

ONLY 49.50 down
or $480.50 cash

BRAND NEW! GREAT VALUE!

Kalimar Reflex



2 1/4 x 2 1/4 single lens reflex with 80mm f3.5 pre-set lens. Fully sync'd focal shutter, auto. film transport, speeds to 1/500 sec.
List $99.50

ONLY 7.50 down
or $75.50 cash

150mm f4 Telephoto lens	$59.50
52mm f3.5 Wide Angle lens	74.50
Extension Tube Set	9.95

NEW LOW PRICES!

Rolleis!

	Cash	Down
Rolleicord VA	$ 99.50	$10.00
Rolleiflex 3.5G Planar w/meter	$266.95	$27.00
Rolleiflex 3.5G Planar w/o meter	$231.95	$23.00
Rolleiflex 2.8E w/meter	$327.95	$33.00
Rolleiflex 2.8E w/o meter	$277.95	$28.00

Olympus Super Wide

35mm camera, with 8 element 35mm f2 lens for panoramic shots, 63°, bright frame finder, parallax corrected. 1/500 of a second fully synchronized. Complete with Eveready Case, Kent B.C. flashgun, clip-on exposure meter, carry-all case.
List Price $166.00

ONLY 14.50 down
or $139.50

All items offered are subject to prior sale. There are limited quantities of some items and orders are filled as received. Rush your Mail Order to us today! Prices are subject to change without notice.

All new merchandise shipped in original packing, and covered by Grand Central's famous 1-year Guarantee, 3-year Service Warranty, as well as Manufacturer's Guarantee!

WE WILL TRADE . . .
any camera for any camera—any lens for any lens. Get the equipment you want NOW by using your present equipment for higher trade-in values.

ORDER TODAY on GRAND CENTRAL'S EASY CREDIT PLAN! FASTEST SERVICE! BEST TERMS!

GRAND CENTRAL CAMERA, Dept. P6 • 1 East 43rd St., New York 17, N.Y.

Please ship the following immediately: ____

Enclosed is $____ ☐ Down Payment. ☐ Complete Payment.

I agree to pay $____ the balance $____ monthly in ____6 mos. ____12 mos. ____18 mos. ____24 mos. (please check one).

I wish to trade in: ____

☐ Give me tentative allowance by mail. ☐ I am shipping equipment for exact allowance.

Your trade-in may be used as down payment! It will be returned at our expense if you don't accept our top offer.

☐ Send Free information and prices on ____

☐ Send pamphlet on Grand Central Time Payment Plan.

City ____ Zone ____ State ____

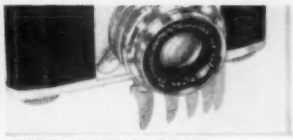
Address ____

Name ____

No Other Camera, Regardless of Cost, Combines...

GUESS-FREE EXPOSURES
Clip-on *ultra-sensitive* exposure meter, can be used on the camera, or at the subject, with incident or reflected light. Reads directly in Light-Value number, or for conventional settings.

INSTANT, ACCURATE FOCUSING
Exclusive Duo-Lever focusing for use with *either* or *both* hands. Fastest operating rangefinder focusing *ever offered* on a 35mm camera. Contrasting color, superimposed image in center of viewing window.



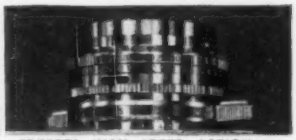
RAPID SEQUENCE FIRING
Exclusive *Triggermatic* action lets you fire away at consecutive action shots, *like handling a gun*. Each stroke of trigger advances film and counter, and winds shutter. Folds away when not in use.

FASTER, SHARPER LENS
Six-element 45mm f1.9 Rikenon lens assures crisp, sharp results even with diaphragm wide open. With this ultra-fast lens, and fast new films, you can shoot *anywhere* with *normal* lighting.

You get so much

BRILLIANTLY FRAMED SCENES
New brilliant single viewing window shows field-of-view in a luminous frame, and also rangefinder image. Your eye need never leave the large rectangular eyepiece between shots. *Easy even with eyeglasses.*

WIRE-LESS FLASH OUTLET
Clip-on flash contact in accessory clip *eliminates* troublesome wires between flashgun and camera. Assures foolproof contact with Ricoh Flash Unit and Ricolite Electronic Flash. Auxiliary standard outlet on camera body.



FREEZES HIGH SPEED ACTION
New Seikosha MXL shutter, with Light Value scale, as well as with conventional shutter and diaphragm settings. Features nine speeds from 1 sec. to 1/500th sec. M, F or X synchronization at all speeds.

BIG SAVINGS!

30% Discounts!

TRAYS & MAGAZINES for Automatic SLIDE CHANGERS

Airequipt Magazines..... 6 for $9.45
Trays for TDC and Bell & Howell.. 6 for $4.20
Trays for Revere..... 6 for $4.20
Trays for Viewflex Changeomatic..... 6 for $4.20

COLOR PRINTS As Low As 20¢

Better prints from your TRANSPARENCIES every time!

2¼ x 3¼.....25¢ (20¢ ea., any 10)
2½ x 5.....40¢ (white border)
3½ x 3½.....40¢ (white border)
4 x 5.....50¢
5 x 7.....$1.00
8 x 10.....$2.00

All color work returned first class mail

COLOR FILM PROCESSING

Top Quality! Prompt Service!

KODACHROME

K-828, 28x40 mm. (8-Exp.)..... 80¢
K-135, 24x36 mm. (20-Exp.).....$1.20
K-135, 24x36 mm. (36-Exp.)..... 2.00
K-135 (20) Stereo, 15 pairs mounted..... 1.80
K-135 (36) Stereo, 28 pairs mounted..... 2.80

EKTACHROME • ANSCOCHROME SUPER ANSCOCHROME

35mm.....$1 120, 620, 828.....90¢
120 SUPER SLIDES.....$1.25
120—2¼ x 2¼, mounted..... 1.25

KODACOLOR

All Sizes.....75¢

THRILLING! NEW! MAT TONES

Glamorous deluxe-finish, non-glossy texture. Studio quality.

PRINTS FROM TRANSPARENCIES

2½ x 3½..... 35¢
3½ x 3½ (white border)..... 60¢
3½ x 5 (white border)..... 60¢
4 x 5..... 75¢
5 x 7..... 1.50
8 x 10..... 3.00

DUPLICATE SLIDE SAVINGS!

35mm. slides (any 10) ea.....20¢
Individual slides, ea.....25¢

Prints From KODACOLOR 25¢

KODACOLOR ENLARGEMENTS 5 x 7.....$1.15
8 x 10.....$2.75
KODACOLOR MAT-TONES 5 x 7.....$1.65
8 x 10.....$3.50
KODACOLOR FILM—All sizes Processed.....75¢

Send cash with order! We pay postage! Money back guarantee on all our work!

COLOR KING LABS

Dept. P-4, Box 1421, Baltimore 3, Maryland

COLOR CLINIC

by David B. Eisendrath, Jr.

A FAMOUS TECHNICIAN SOLVES YOUR PROBLEMS

Comparative characteristics of color films

Recently I compiled some data on the comparative characteristics of color films for a booklet that Color Corporation of America has just put out. Since this issue of POPULAR PHOTOGRAPHY is concerned with summertime shooting, including advice on choosing color films, you might like to see my own evaluation of the various materials commonly used. Please note that these are my own feelings and evaluation based on the comments of many of the competent color workers I have talked to. Please also note that all of these materials are good, and each has a particular place to be used. The comparisons are made, not to say that any product is better than any other, but to help you to evaluate them so you can choose the right one for your needs.

FILMS	SIZES AND TYPES AVAILABLE	EXPOSURE LATITUDE (Varies with emulsion and subject)	GRAININESS	COLOR CHARACTERISTICS	RESOLUTION AND SHARPNESS	PUSHABILITY (Varies with emulsion and subject)
POSITIVE (REVERSAL) FILMS						
ANSCOCHROME	35-mm, rolls, sheet. Daylight, Tungsten	1 stop either direction	Fine grain	Soft, warmish	Extremely good	1 stop excellent, 1½ satisfactory
SUPER ANSCOCHROME	35-mm, rolls. Daylight, Tungsten	1 stop either direction	Fine grain; almost as fine as Anscochrome	Soft, warmish	Extremely good	1 stop excellent, 1½ satisfactory
EKTACHROME E-1	Sheet. Daylight, Tungsten	½ stop either direction	Moderately grainy	Slightly cold, bright, high contrast	Good	1 stop satisfactory, 1½ with control
EKTACHROME E-2	35-mm, rolls Tungsten, Flash	½ stop either direction	Rather fine grain	Slightly cold, bright, high contrast	Very good	¾ stop, some subjects may allow more
KODACHROME	35-mm. Processed by Kodak or licensee only. Daylight, Tungsten, Flash	½ stop either direction	Extremely fine grain	Intense, bright	Excellent, wonderful!	None
COLOR NEGATIVE FILMS						
KODACOLOR	35-mm, rolls. Universal	½ stop under, 1½ stops over	Very fine grain	Control accomplished by manipulation in printing	Extremely good	Very little, depends on end use
EKTACOLOR S (for short exposure) EKTACOLOR L (for long exposure)	Sheet. Universal with filtration	½ stop under, 1½ stops over	Very fine grain	Control accomplished by manipulation in printing	Extremely good	Very little, depends on end use

Illumination by fake flame

We are trying to make a movie in our company and would like to take a dramatic shot showing a technician looking into the peep-hole of one of our refractory furnaces, but the light coming from the peep-hole in the door is so dim that we can not get much of an exposure even with the new fast Super Anscochrome. How do movie companies achieve this effect?—M.S.B., Detroit, Mich.

Usually when light from a flame is used to illuminate a subject in color it is necessary to substitute a brighter flame, except in cases of a large area, such as a blast furnace or something similar. If you cannot use a brighter flame in your furnace, I would suggest faking the shot. Mount a small spotlight or photoflood inside the furnace and put a piece of orange-red cellophane or theatrical gelatin over the inside of the peep-hole window. If you want to make the flames appear to move and to cast shadows or color changes over the subject's face, I would hang a narrow strip of darker material across the port and move it during the exposure. I have used this technique quite successfully in similar situations.

Questions of general interest to the color photographer will be answered in this department. However, individual replies can not be given for questions that are not used.—Ed.

Rapid-Sequence Spring Motor—Ten photographs in five seconds can be taken with a single winding! $69.50

50-Foot Capacity Bulk-Film Magazine—Used alone or with Spring or Electric Motor to take up to 420 35mm frames without reloading. $69.50.

Electric Motor-Magnetic Remote Control—Push-button, remote-controlled electrical operation of camera as far as 75 feet away. $150.00

Extension Bellows and Tubes (Regular or reverse)—Exceptional aids in macro and microphotography. Offer optical ranges from life size to more than 10-time magnification. $12 to $59.50.

New! Radio-Controlled Unit—Makes possible radio-controlled operation up to a mile away... without wires!

THE INCOMPARABLE

PRAKTINA FX

Really two cameras in one for unmatched versatility! The most advanced 35mm single-lens reflex camera combining rangefinder speed with reflex control. Brilliant array of features unmatched by any other fine camera! Sensational, unique accessories!

Take your choice of three fine automatic lenses: f 2.8, 50mm C.Z. Jena Tessar; f, 2.0, 58mm C.Z. Jena Biotar; or f, 1.9, 55mm Steinheil Quinon.

HERE ARE TOMORROW'S CAMERAS TODAY!

Here today—obsolete tomorrow! That's the pattern with most cameras. That's why you should protect yourself—select a camera with **years-ahead** design—a camera so far ahead of the field that it will be up-to-date—not **out-of-date**—years from now!

And that's why the incomparable Praktina FX and Praktica FX3 are your best buys in the fine camera field. Here are **tomorrow's cameras today.** Here are the **features of the future**—that other cameras will be imitating in the years to come. Here is assurance that you will still be the proud owner of a camera that's the unquestioned leader in its field . . . years from now!

THE TOP-VALUE

PRAKTICA FX3

The only popular-priced camera that gives you all 3 top features in expensive cameras today: (1) Internally coupled automatic lenses. (2) Lens Interchangeability. (3) Two-way single-lens viewing. The best dollar-for-dollar value in the fine camera field!

Praktica FX3 Automatic available with either f 2.8, 50mm Westanar, f 2.8, 50mm C.Z. Jena Tessar, or f 2.0, 50mm Westagon . . . all with automatic diaphragm control.

Also available: Praktica FX2 with either f 2.8, 50mm C.Z. Jena Tessar, or f 1.9, 58mm Huge Meyer Primoplan lens, pre-set diaphragms.

Special Notice to Present and Future Owners of PRAKTINA FX, PRAKTICA FX3 and PRAKTICA FX 2 Cameras

All guarantees are now valid for two full years from date of purchase

Standard Camera Corporation PP-24
319 Fifth Avenue, New York 16, N. Y.

Mail this coupon today for your free copy of ☐ "Masterpiece of Simplicity—Praktina FX"; ☐ "New Automatic Praktica FX3"; ☐ "Praktina FX Radio-Controlled Unit"; ☐ Praktina FX 50-Foot Capacity Bulk Film Magazine"; ☐ "Praktina FX Spring Motor"; ☐ "Praktina FX Electric Motor"; ☐ "Follow-Focus Lens by Novoflex". They're brand new editions packed with information about these two unique cameras, their valuable accessories and their many applications for professional, industrial, other specialized uses.

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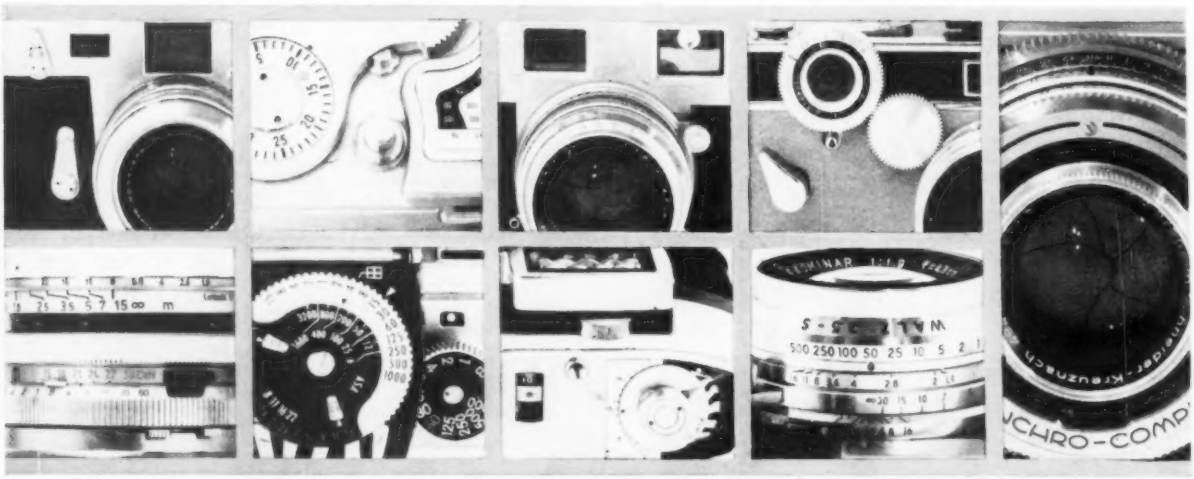
STANDARD CAMERA CORPORATION, Offices and Exhibit: 319 Fifth Avenue, New York 16, New York

WHAT'S NEW

FROM THE CHICAGO PHOTO SHOW



9 NEW 35-MM CAMERAS

These cameras were received in advance of the Chicago Photo Show, allowing POPULAR PHOTOGRAPHY staffers time to run field tests. Additional new products, not received in time to test for this issue, will be covered in the near future. For detailed show coverage see Bob Schwalberg's report on page 12

NIKON S3

THE NEWEST MEMBER of the Nikon family is the model S3 which incorporates all of the features of the more expensive model SP (introduced in March, 1957) with the single exception of the SP's multifocal viewfinder system. The Nikon S3 viewfinder provides etched frame-line markings for three focal lengths: the 35-mm wide-angle, the 50-mm normal focus, and the 105-mm long-focus lenses. The viewfinder of the previous model S2 provided a single etched-line frame for the 50-mm lens only.

Important SP camera features now available at more modest pricing in the Nikon S3 include the SP shutter with high-speed (13 millisecond) curtain, non-rotating speed selector dial that couples with the clip-on Nikon photoelectric exposure meter, plus full SP flash synchronization. In addition, the Nikon S3 will definitely accept the electric motor drive unit which enables rapid-sequence shooting at the rate of three frames per second. Previously available only for SP

cameras, present plans call for individual precision fitting of motor backs to S3 cameras just as soon as sufficient supplies become available.

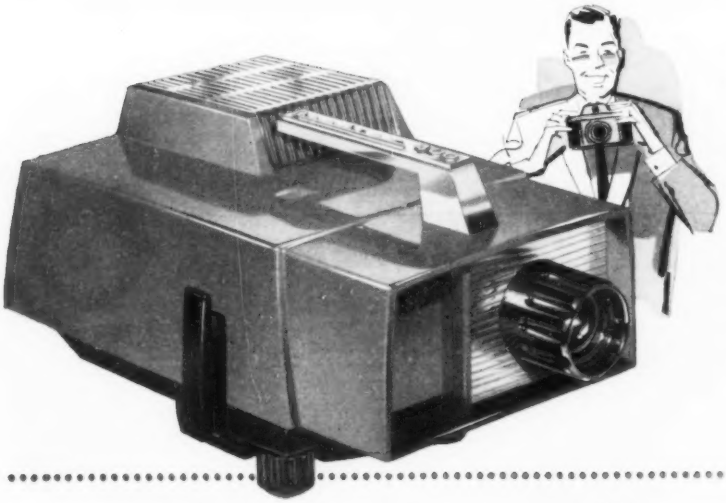
Other features derived from both the S2 and SP models include the single-stroke rapid-advance lever, folding rewind crank handle, automatically self-starting film counter, three-position delayed-action timer, removable camera back controlled from a single latch, and many others made familiar in past Nikon history.

FEATURES

- Combined view-rangefinder window; etched frame lines indicate fields of 35-, 50-, and 105-mm lenses.
- Top-of-camera knurled-wheel focusing with 50-mm and shorter lenses.
- All Nikkor lenses from 25- to 135-mm couple to rangefinder.
- Nikon SP-type focal-plane shutter has speeds from 1 to 1/1000 sec plus Time and Bulb. MFX synchronization with color-coded shutter speeds, self-timer.
- Single-stroke rapid advance lever, film rewind crank.
- Self-resetting frame counter, electrified accessory shoe.
- Price: S3 with 50-mm Nikkor f/2 lens, $309.50, case extra.
- Importer: Nikon, Inc., 251 Fourth Ave., New York 10.

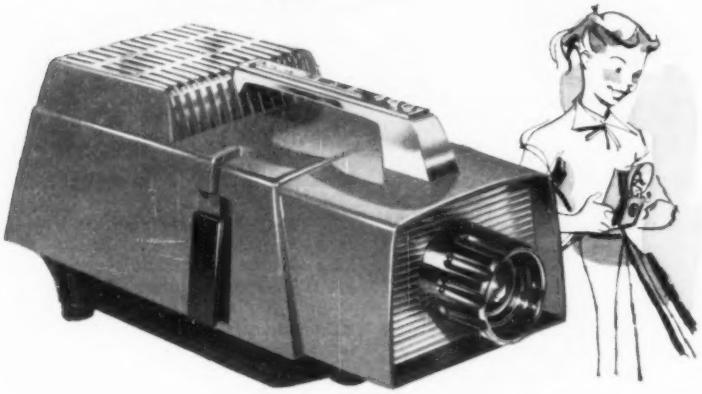
WHAT'S NEW continued on page 46

Color-slide projection for every camera owner at a budget price!



Realist "400" automatic

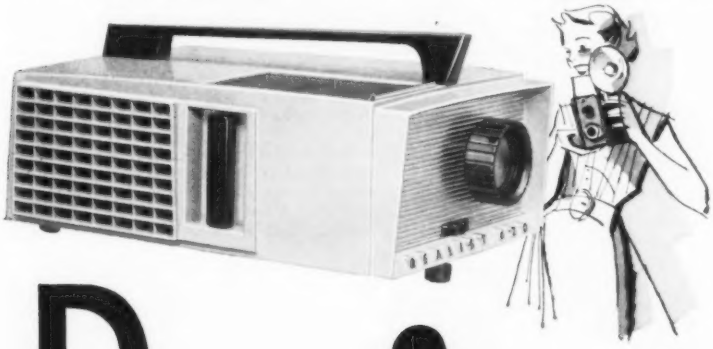
For owners of 35 mm. cameras—an automatic projector at less than $30! Here's the lowest priced automatic ever! *Half* what you'd expect to pay. Projector features new, exclusive, jamproof REALOMATIC slide-changing system. Magazines hold 30 slides—retail for only $1.00 each. New 150-watt Tru-Focus lamp gives amazingly brilliant image. Made of high-impact phenolic plastic. Jet flow cooling system and heat-absorbing glass protect your valuable slides. Will also show 127 square Super slides.



Realist "400" color projector

Show 127 square Super slides or 35 mm. full size, sharp-focused—for under $23! That's what you'd expect to pay for a hand viewer! And look what you get—a quality projector that performs every bit as well as those costing twice as much.

Ask to see the REALIST "400" projector, plus Brownie Starflash camera and 127 Ektachrome film by Kodak—all for less than $33!



Realist "620"

Shows 2¼ x 2¼, 2 x 2, 127 square Super slides. Sells for less than $40! Accessories available for showing Polaroid or half a stereo pair. Most versatile projector on the market. Shows slides big as life at half the price. Outsold all other projectors in 1957. Has style and performance features of projectors costing twice as much. Made of die-cast aluminum. Blower cooled. Features 300-watt Tru-Focus lamp. At this price, no reason for anyone to deny himself the thrills of color-slide projection.

Realist®

A subsidiary of David White Instrument Company, manufacturers of precision surveying instruments and photographic products. 2051 N. 19th St., Milwaukee 5, Wis.

PAXETTE AUTOMATIC SUPER III

THE PAXETTE AUTOMATIC is the first camera to combine the advantages of a coupled rangefinder and lens interchangeability with a built-in, internally linked exposure meter for automatic determination of exposure, a system originally introduced in the Agfa Silette SL.

Following the same basic approach as the Silette, the Paxette Automatic has cross-coupled shutter and diaphragm controls linked to a movable index of the camera's built-in exposure meter. The method of operating includes four simple steps:

1 The meter is set for the film's ASA exposure index by means of a scale (engraved with values from 10 to 640) on the underside of the camera's lens barrel.

2 The photographer selects an appropriate shutter-speed.

3 The meter is pointed at the subject for a conventional brightness reading, and the needle is allowed to come to rest.

4 The diaphragm control ring is rotated until a diamond-shaped index marker on the meter face is aligned with the indicator needle. If the resulting camera setting involves too large or too small a lens aperture, this may be changed by rotating the shutter-speed ring which, by means of cross-coupling, will give the appropriate speed for any aperture desired. In addition, the photographer who disagrees with the metered exposure can make any desired adjustment by holding either control and changing the other.

A choice of four 50-mm lenses is supplied with the Paxette Automatic: Two *f*/2.8 four-element lenses and two six-element *f*/1.9s; an Enna and Steinheil lens in each speed. Enna accessory lenses available are a 35-mm *f*/3.5 wide-angle, as well as 90-mm and 135-mm *f*/3.5, and 200-mm *f*/4.5 long lenses.

The between-the-lens diaphragm mounted in each lens couples as the lens is bayonet-mounted to the camera body, linking diaphragm, exposure meter, and shutter.

Located behind the interchangeable lenses, the shutter is a Prontor SLK, with speeds from 1 to 1/300 sec, and cross-coupled in exposure value style with the diaphragm. Since the linked meter transfers exposure readings directly to the lens-shutter settings, EV numbers are not provided.

The two Steinheil lenses incorporate two noteworthy features. A pair of red pointers, one on either side of the footage index mark, move automatically as the aperture is adjusted to indicate depth of field. The second feature, a sliding ring on the lens mount, provides an ingenious new approach to flash exposure, automatically translating guide numbers for one ASA film speed to any other, then reading directly in *f*-stops opposite the lens distance scale.

Focusing and framing is accomplished through a single eyepiece with illuminated frame-lines provided for the 50-, 90-, and 135-mm focal lengths. The diamond-shaped rangefinder patch is centrally located and all focal lengths couple automatically.

A two-stroke lever transports the film and resets the shutter. Built into the camera body, this lever is located approximately ½ inch below the top plate on the right-hand side of the camera. Rewinding is accomplished by means of a similar lever located at the left-hand side of the rear camera panel. To operate, the rewind button is held down with the thumb of the right hand and the lever is pumped with the left-hand thumb until the leader is felt to pull away from the camera's fixed take-up spool, a somewhat lengthy procedure.

The Paxette Automatic Super III is made in Western Germany by Braun of Nurnberg (not to be confused with Braun of Frankfurt who make the Braun-Hobby electronic-flash units).

FEATURES

- Exposure meter is linked to diaphragm and shutter-speed controls — aligning two meter needles sets exposure directly.
- Combined range-viewfinder has illuminated frame lines for 50-, 90-, 135-mm lenses. Entire finder image frames for 35-mm lens.
- Lenses are interchangeable, couple to rangefinder and exposure meter. Standard lens is 50-mm *f*/2.8 Color-Ennit, with option of 50-mm *f*/1.9 Steinheil or Enna lens. Accessory lenses from 35- to 200-mm are available.
- LVS-coupled Prontor SLK behind-the-lens shutter has speeds from 1 to 1/300 sec, Bulb, self-timer, M and X synchronization.
- Two-stroke rapid wind lever, unique film rewind lever.
- Price: With 50-mm *f*/2.8 Color-Ennit lens, $149.50; case, $10.95.
- Importer: Burleigh Brooks, Inc., 10 W. 46th St., New York 36. West Coast Distributor: Ponder & Best, Inc., 814 N. Cole Ave., Hollywood 38, Calif.

WHAT'S NEW continued on page 48

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Contaflex II	114.95
Contaflex III f2.8	*
Contaflex IV f2.8	*
Contaflex Alpha	*
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Contax IIA Body	130.00
Contax IIA f2	199.50
Contax IIA f1.1 Zunow	299.50
Contax IIIA Body	188.00
Contax IIIA f1.5	259.00
Contax IIIA f1.1 Zunow	330.00
Contina IIA f2.8	*
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AIRES 35 III C

TWO major, and a host of minor improvements distinguish the new rounded Aires III C from its angular predecessors. In a revision which has affected everything from the strap-lugs to the rewind release, only the lens remains as it was before and happily so. This is the six-element H-Coral 45-mm f/1.9 double Gauss type objective about which we've commented editorially in past issues.

The outstanding improvement in the III C is the extension of the illuminated bright-line frame-finder system to include continuous automatic parallax correction over a focusing range from infinity to 32 inches. At the same time the combined single-window range-viewfinder has been slightly enlarged and the finder patch made somewhat contrastier.

The second major III C innovation is a modification of the swing-open back in which the baseplate is a separate unit which must be removed before the back is opened. The result is to combine the convenience of an opening back with the rigidity, and optical accuracy, of solid unit construction. In addition, the pressure plate has been generously enlarged, and the spool chamber will now accept Leica and other similar film cassettes.

Hitting a few of the more notable minor improvements we must mention the simplified Exposure Value system which makes it a lot easier to use, or to ignore, the EV calibrations. The Seikosha MXL shutter (speeds from 1 to 1/500 sec) now includes a delayed-action mechanism controlled by a lever at the side of the lens barrel which gives a 12-sec delay. The single-stroke advance lever is now considerably smoother, and while the stroke remains approximately 180 degrees, it's a lot easier to push and has a snappier return spring.

The Aires 35 III C is manufactured by the Aires Camera Co., Ltd., of Tokyo.

FEATURES

- Illuminated bright-line frame in combined view-rangefinder window moves to give full automatic parallax correction.
- H-Coral 45-mm f/1.9 six-element lens focuses down to 32 in.
- Seikosha MXL shutter has speeds from 1 to 1/500 sec, Bulb, self-timer. M, F, and X synchronization.
- Single-stroke advance lever, provision for intentional double exposure.
- Automatic-resetting frame counter, film rewind crank.
- Price: $110, case $13.50.
- Distributor: Arel, Inc., 4916 Shaw Ave., St. Louis 10, Missouri.

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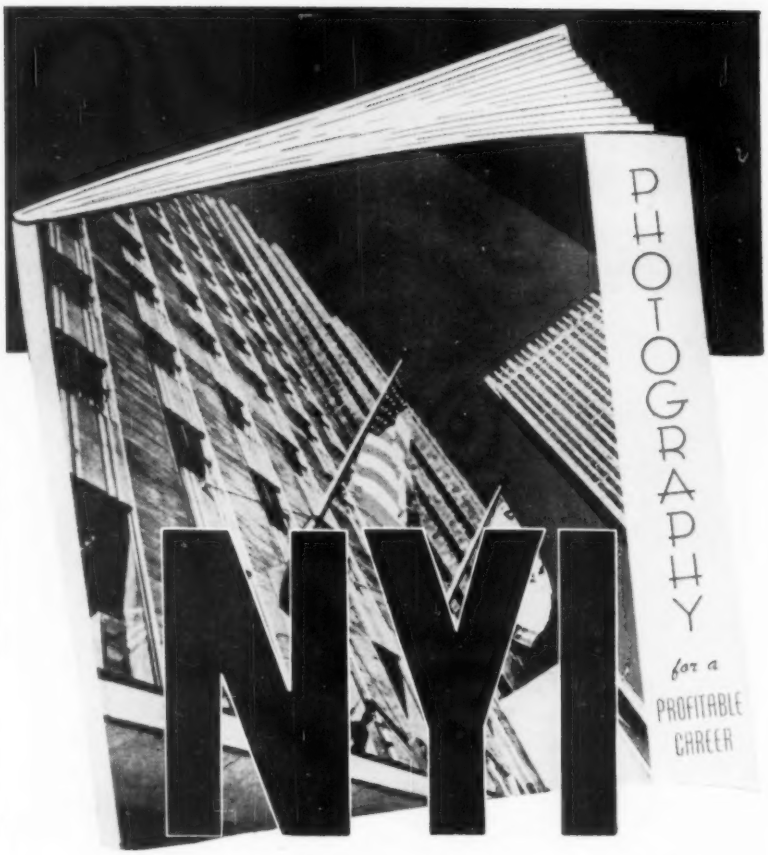

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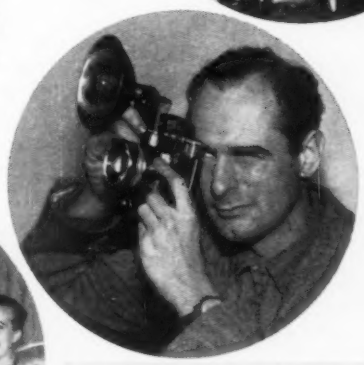

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- (Present) Camera Store Owners—we have a program that may make it possible to utilize your present set-up.

What Territories Are Open?

Albuquerque, Anchorage, Atlanta, Boston, Chicago, Cleveland, Denver, Detroit, Honolulu, Houston, Miami, Milwaukee, Minneapolis, Montreal, New Haven, New Orleans, Omaha, Philadelphia, Phoenix, Pittsburgh, St. Louis, Salt Lake City, San Juan, Seattle, Toronto, Tulsa, Washington, Winnipeg, Vancouver, Plus Many Others!

If you feel that your leadership and capacity for hard work can match ours, please write in details and in confidence—telling us about yourself. You incur no obligation in doing so. Interviews may be held in your area or in New York City. **Your letter should be airmailed to our home office.**

Attention: President

DOWLING'S
175 Fifth Ave.
New York 10, N. Y.

MINOLTA AUTOWIDE

THIS NEWEST MEMBER of the Minolta family provides a highly original and ingenious method of combining a built-in photoelectric exposure meter with camera controls to achieve automatic exposure control. Moreover, it is the first camera in its class to offer a 35-mm wide-angle (63-degree field) lens. The Autowide's optic is, incidentally, a six-element *f*/2.8 with a special double coating said by the manufacturer to provide superior color rendition and to obviate the need for UV absorbing filters.

To achieve correct exposure the user need only point the Autowide's meter toward his subject, twirl a milled wheel (at the back of the camera) until a red index-arrow lines up with the meter needle. As with other similar systems, the nonphotographically oriented picture maker need not concern himself with any numbers. The more photographically informed may, however, readily adjust actual aperture and speed combinations. *First*, as soon as the red arrow and needle are aligned the Minolta's shutter and diaphragm become cross-coupled, and by turning the same milled wheel the possible *f*-stop and shutter speed combinations can be selected in a small window (provided with a magnifier for easy visibility) about a half inch to the left of the meter dial on the top plate. *Second*, to change shutter speed without varying the aperture, the hub of the control wheel is pressed in and the outer milled rim rotated, and vice versa.

The Autowide viewfinder is large, and has an illuminated bright-line frame. No rangefinder is provided, focus being set on a standard distance scale with depth-of field-markings. The shutter is a Citizen MVL with M and X synchronization plus a delayed-action timer, speeded from 1 to 1/500 sec, plus Bulb. The single-stroke advance lever is mounted at the right-hand side of the camera bottom. The rapid rewind crank folds flush into the camera bottom and is the largest we've ever seen (having a radius of 1⅛ inches). Unfolding it automatically sets the camera for rewinding. The extremely smooth shutter-release button is a large semicircular milled metal piece projecting upward just behind the meter's honeycomb face.

FEATURES

- Exposure meter is linked to shutter and diaphragm controls on back of camera—aligning two needles in meter sets exposure.
- Rokkor 35-mm *f*/2.8 six-element wide-angle lens.
- Citizen MVL shutter has 1 to 1/500 sec speeds and Bulb, self-timer, M and X synchronization.
- Bright-line viewfinder, automatic resetting frame counter.
- Single-stroke rapid wind lever on camera bottom, film rewind crank.
- Price: $89.50, case extra.
- Distributor: The FR Corp., 951 Brook Ave., New York 51.

PETRI 2.8

THE PETRI 2.8, which was exhibited at IPEX last year, is now being nationally distributed in the U. S. Featuring a 45-mm Orikkor *f*/2.8 lens, a single-window range-viewfinder, automatic single-stroke thumb-lever film transport, and shutter speeds from 1 to 1/300 sec, plus Bulb, it is a handsome handful of camera priced at a very modest $49.95.

Other Petri 2.8 features include a very clever rapid rewind knob with a small handle which pops up for crank operation, an exposure guide (for ASA 50 films) engraved on the top plate, and a hinged back which swings open to reveal a desirably over-sized pressure plate.

The Petri 2.8 is a product of Kuribayashi Camera Industry of Tokyo.

FEATURES

- Single rangefinder and viewfinder window.
- Single-stroke rapid wind lever cocks shutter and advances film. Rewind crank.
- 45-mm Orikkor *f*/2.8 four-element lens focuses down to 2 ft.
- Petri Carperu shutter has speeds from 1 to 1/300 sec, Bulb, X synchronization.
- Price: $49.95, case $9.95.
- Importer: Petri Camera Co., 11 W. 20th St., New York 11.

WHAT'S NEW continued on page 54

Just introduced—already a smash hit!

FUTURAMIC STROBONAR

Most revolutionary electronic flash ever offered

NO POWER PACK

Operates on batteries and AC from lamphead alone

DUAL TRANSISTORS

Two Honeywell power transistors for outstanding performance

Here's the freedom and convenience you've always wanted in electronic flash. The Futuramic has no power pack of any kind; it operates on 3 photoflash batteries or household electricity from the lamphead alone! Just connect it to your camera and start flashing pictures — it's as easy as that. With the Futuramic, you flash pictures for half a cent each! It averages over 500 flashes per set of new Eveready E-95 Batteries (200 on standard photoflash cells) with a Kodachrome guide of 35. Exclusive combination of special flash tube, new smaller reflector, and optical lens gives 70° light distribution — enough for most *wide-angle* lenses. There's a ready light, and big exposure dial to make correct camera settings easy.

Start enjoying this new way to take pictures. Ask your photo dealer to demonstrate the Futuramic on your camera soon.

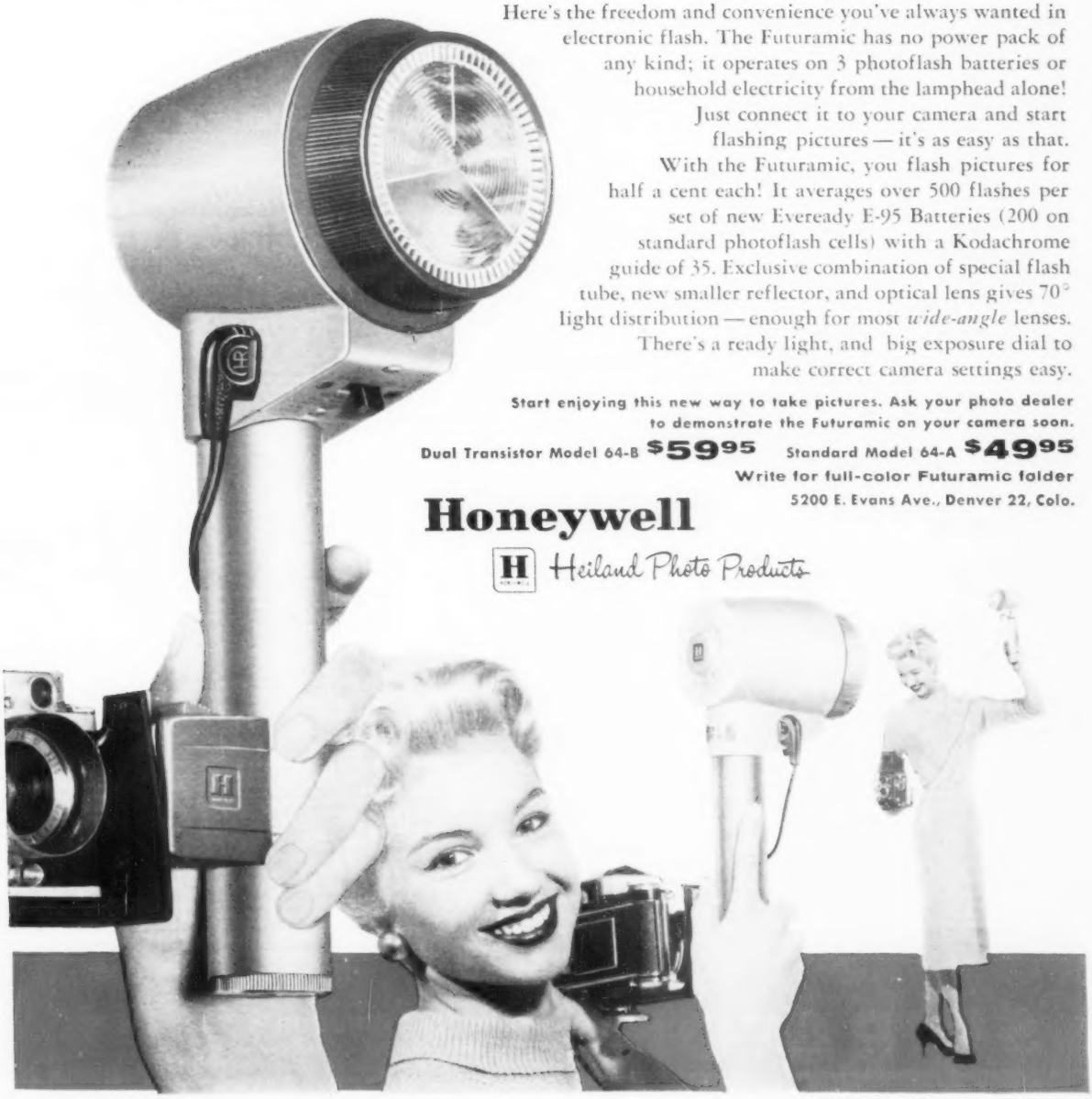
Dual Transistor Model 64-B $59.95 **Standard Model 64-A $49.95**

Write for full-color Futuramic folder

5200 E. Evans Ave., Denver 22, Colo.

Honeywell

Heiland Photo Products



More **POWERFUL** than ever and at the **LOWEST PRICES** in photographic history!

NEW! LATEST DESIGN AUXILIARY Spiratone

Telephoto+Wideangle lenses

Model V

For virtually all 35mm cameras with f:2.7, 2.8, 3.2, 3.5 and slower lenses, and for Polaroid cameras.

$9.95 EACH

EXCLUSIVE FEATURES: Hard S-coating — superb color correction—same exposure and lens opening as usual — no installation: lenses screw into Series V adapters (filterholders) — interchangeability of adapters for use of one lens on several cameras — availability of many accessories at low cost. Spiratone Aux. Model V telephoto lenses are MORE POWERFUL, give almost double the magnification of other auxiliary lenses priced under $30.00.

MONEY SAVING COMBINATION OFFERS for CONTAFLEX 'CO'

Model V telephoto or wideangle lens	$ 9.95
Leather Case	.89
Adapter	1.45
Filter Retaining Ring	.95
Two Coated Filters	4.88
Total Value at our Low Prices	$18.12
YOUR COST FOR COMBINATION DEAL 'CO'-1A	**$14.95**

OR

Set of Model V telephoto and wideangle lenses	$19.90
Double Leather Case	1.59
Adapters	2.90
Filter Retaining Ring	.95
Three Coated Filters	7.32
Total Value at our Low Prices	$32.66
YOUR COST FOR COMBINATION DEAL 'CO'-2A	**$27.95**

telephoto and wideangle lenses for POLAROID CAMERAS

Telephoto or wide-angle, adapter, leather case. FOR 80, 95 (A & B), 150 ... $12.29; FOR 110, 110A ... $16.95. Set of Telephoto and Wideangle lenses, adapters, double leather case FOR 80, 95, 95A, 150 ... $24.39; FOR 110, 110A ... $29.95

MONEY SAVING COMBINATION OFFERS for EDIXA, SIGNET, CONTESSA, BOLSEY, MEMAR, REGENT, GRAPHIC 35, PONY, ARGUS C4, C44 MINOLTA A, A2, BANTAM RF, RICOH 35, VITO '35'

Model V telephoto or wideangle lens	$ 9.95
Leather Case	.89
Adapter	1.45
Two Coated Filters	4.88
Telephoto or wideangle Finder	3.98
Filter Retaining Ring	.95
Total Value at our Low Prices	$22.10
YOUR COST FOR COMBINATION DEAL '35'-1A	**$17.95**

OR

Set of Model V telephoto and wideangle lenses	$19.90
Double Leather Case	1.59
Two Adapters	2.90
Two Coated Filters	4.88
Filter Retaining Ring	.95
Universal Finder	8.95
Total Value at our Low Prices	$39.17
YOUR COST FOR COMBINATION DEAL '35'-2B	**$31.95***

A Spiratone WIDEANGLE adds coverage in cramped places, gets that extra area into the picture; wonderful for wide-screen landscape scenes; increases depth-of-field, for foreground to infinity sharpness, makes accurate focusing unnecessary!

A Spiratone TELEPHOTO brings distant objects closer, helps fill **entire** negative or slide with important subject matter, crops out unwanted background, improves perspective in portraits.

Name your camera when ordering—allow 25c for shipping one lens, 60c for a set.

"The ABC of Spiratone Aux. Telephoto and Wideangle Lenses", a dictionary on aux. lens terms and performance — free with order, or send 5c — 10c credited towards your next order.

ONLY SPIRATONE AUXILIARY TELEPHOTO and WIDEANGLE LENSES CARRY A Lifetime Guarantee

NEW: 1958 model SPIRATONE UNIVERSAL TURRET and CLOSEUP (+1, +2, +3) FINDER The most versatile finder ever made, matched to your normal 35mm camera lens, telephoto and wideangle Aux. Lenses. Has parallax correction to 10', for use with +1, +2, +3 closeup lenses, and from 3 feet to infinity ... **$12.95**

*$5.95 more for Universal and Turret closeup finder in place of Universal finder.

Spiratone auxiliary TELEPHOTO and WIDEANGLE lenses

MODEL V-C3 for **ARGUS C-3**

Set of Telephoto and Wideangle Lenses, complete with proper fittings, double leather case, retaining ring, coated conversion filter, universal finder, a $37.66 value, COMBI-DEAL C3-2A **$27.44**

Telephoto or Wide angle lens, complete with proper fitting, leather case, matching finder attachment, coated conversion filter, filter retaining ring, a $16.68 value. COMBI-DEAL C3-1A **$12.95**

Accessory Clip, for older model Argus C3 ... $1.00

MODEL "V1" for **TWINLENS REFLEX CAMERAS and RETINA II, III (a, b, c,) AIRES III, KONICA, RICOH 500**

EITHER LENS **$16.95** EA. BOTH LENSES **$29.95**

W. universal closeup finder for 35mm camera. $39.90

Complete with deluxe leather case, filterholder, interchangeable adapter —coated, color-corrected—no effect on exposure or lens opening.

Lenses are available for Rolleiflex (exc. 2.8), Rolleicord and Minolta Autocord Bayonet — Ciroflex and Graflex 22—Ricohflex — Yashicaflex — Walzflex — Autoflex, etc.

FREE with Model VI lens order—two optical glass filters.

SPECIAL with SPIRATONE TELEPHOTO Lenses Portrait-Diffusion Disk for these professional looking portraits ... only **$2.00** extra

MINUS LENSES for TELEPHOTO EFFECTS

	PER 3	PER 4
SER. V	$3.95	$5.15
SER. VI	$4.75	$6.25
SER. VII	$6.50	$8.55

for single lens reflex cameras

With bellows or ext. tubes, telephoto and extreme telephoto effects can be yours without buying expensive telephoto lenses. A single Minus 4 lens makes your 135mm telephoto into a 270mm telephoto—varied combinations will produce a variety of effects. Minus Lenses improve the prespective in portraits, too, by lengthening the effective focus length. Minus Lenses fit filterholders and are sold in sets of three (of your selection) or four. Available in Minus 1, 2, 3, and 4. *Shipping Charge 10c*

10 FT. CABLE RELEASE $4.49

with setscrew and booster spring

A sturdily constructed German cable for remote control work to operate with any Kodak or Compur type shutter. Imagine the many new possibilities this release opens up for you—whether you photograph wild animals, unsuspecting children at play or take a self-portrait, you'll find this release a valuable accessory. (Leica, Yashica model add 25c) *Sh. Cost 25c*

Other long Cable Releases with setscrew.

40" $1.50 60" $2.50 20 ft. $7.95 40 ft. $12.49

MODERNIZE YOUR CAMERA WITH A... **RAPID WIND $3.95** PPD

For: LEICA, CANON, NIKON, CONTAX, PRAK, TIFLEX, PRAKTINA, PENTACON, ARGUS, CD, C4, C44. Adapts your camera.

5 shots in 6 seconds! No installation—fits over winding knob.

Save 50% **GROUNDGLASS FOCUSER** for virtually ALL 35mm Cameras

Fits back of almost every 35mm camera with removable back—lets you check lens, finder accuracy, effect of closeup lenses etc. No installation — snaps in and out of film plane. **$2.49**

SAVE 67% Reg. $6.00 ea. **135MM LENS CASE $1.98** TWO FOR $3.59

Top Grain Leather—Plush lined—Holds even large 135MM lenses. Incl. carry strap. *Sh. Ch. 35c each.*

Save 50% on the meter that has everything

the 1958 Spiratone **PHOTO ELECTRIC EXPOSURE METER** BRAND NEW

Super Sensitive photocell reads reflected and incident light; settings for all shutters, incl. movie, Polaroid, LVS, EVS. ASA range from 3 to 3200. f stop range from 1 to 32; shutter speed range from 1/1000th to 16 seconds. *Sh. Ch. 35c*

Extra Sensitive booster with incident attachment, for poor light readings, reg. $3.50 only **$1.75**

$4.98 INCL. LEATHER CASE & STRAP

Famous Make **CLIP-ON PHOTO-ELECTRIC METER** Fits accessory clip of all popular 35mm cameras, ASA speeds to 800, f stop range to 32, speeds to 1/1000th for refl. and inc. light, incl. leather case and strap, reg. $9.95. *Shpg. Chge. 30c* **$5.25**

FOOLPROOF FLASHSHOTS EVERY TIME 25¢ WITH YOUR ORDER FOR $3.00 WORTH OR MORE, MERCHANDISE

FLASH DIAL

Metal dial, in leather cover, shows directly correct settings for all films, all bulbs, at all openings, all distances—without guide numbers, without figuring. Even if your present flashgun has a dial, you will want this new, accurate, simple means of ascertaining perfect flash pictures.

SYNCH YOUR OLD CAMERA

- **Fully adjustable, mechanical tripper, requires no installation, works through standard cable release socket of most old cameras. Has fitting for standard flash cord.**
- **Allows adjustment for flash bulbs and zero (X) delay for Strobe.** *Leather Case 19c extra*

$2.49 PPD.

Tripper with BC Fan Flash, with ejector, tester $8.95 *Sh. Wt. 2 lbs.*

Top Grain Cowhide **JUMBO PRESS BAG $15.89**

16"x 11"x 6" the size bag you expected to pay $50.00 for! And made of a beautifully finished topgrain cowhide, too! No zippers—just bend cover back and everything becomes accessible. Felt-covered adjustable partition, imported hardware, long shoulder strap, attached to strap around bag for easy carrying of tripod. *Shpg. Wt. 6 lbs.*

ECONOMY SIZE. 11" x 9" x 6" same construction as above ... 10.49

All prices include excise tax. Postage and insurance MUST be prepaid even when no shipping weight is stated — overpayment will be credited in full. Everything listed is brand-new (unless otherwise stated) and fully guaranteed against defects. 25% deposit on C.O.D.'s. Items marked 'Free', 'Premium' or 'Bonus' MUST be requested at time of purchase. Foreign orders welcome — allow for extra handling charges. When ordering accessories, be sure to name your camera, lens, shutter!

SPIRATONE INC.

When in New York visit us at **369 7th AVENUE, NEW YORK 1, N. Y.** (Opposite Pennsylvania Station)

SEND MAIL ORDERS TO: *Long Island store (near Main St.) at* 135-06 NORTHERN BLVD. DEPT. P6 FLUSHING 54, N. Y.

CLOSEUPS ARE SIMPLE

and inexpensive, when you buy your closeup accessories from Spiratone, the only firm specialized in low-cost closeup photography equipment.

DELUXE COPY STAND

$12.95

Designed by us for use in conjunction with closeup lenses, extension tubes, bellows attachments, to complete with a moderate investment, your close-up and copying equipment. Strong enough for a Polaroid, yet compact in storage (two-piece post) and equally well suited for copying, medical, scientific work and movie titling. Camera bracket permits centering of camera over subject 15x18" baseboard is very practical for large originals. 1½" diameter pole is 38" high. *Shipping Weight 11 lbs.*

GOOSENECK LIGHT ATTACHMENT $5.95

With C clamps, fits copy stand or enlarger pole.
2 special reflector floods, $2.29 add'l. *Ship Wt. 4 lbs.*

PRO COPY OUTFIT Stand, light att. w. reflector floods, Proxiscope Sr., all as illus. **$24.99**

FREE with orders over $3.00, or send 25c for CLOSE-UP DICTIONARY—contains all needed tables, too.

CLOSEUP (Portrait) and EXTREME CLOSEUP LENSES

bring within **EVERY** photographer's reach subjects which would be too small if photographed at the regular 3 ft. closest camera setting. Head and shoulder portraits, children's pictures, copy work—a whole new field of picture taking.
With extreme closeup lenses, you can get as close as 8" with a Plus 4, 7" with a Plus 5, 5½" with a Plus 6, 3½" with a Plus 10. You can use two extreme closeup lenses, with a double retaining ring, for even more extreme closeups. With a Plus 5 lens, you can fill the complete 35mm frame when reproducing a postcard: a Plus 10 is just right for insects, stamps and coins. Extreme Closeup lenses make macrophotography possible with a tiny investment. **All exc. Plus 10, mounted in metal rings.**

	Series IV	Series V	Series VI	Series VII
Plus 1 (ctd.) (to 20")	$1.54	$1.94	$2.44	$3.34
Plus 2 (ctd.) (to 13")	1.54	1.94	2.44	3.34
Plus 3 (ctd.) (to 10")	1.54	1.94	2.44	3.34
Plus 4 (ctd.) (to 8")	—	1.75	2.00	3.25
Plus 5 (ctd.) (to 7")	—	1.95	2.30	3.75
Plus 6 (ctd.) (to 5½")	—	2.25	2.75	4.25
Plus 10 (ctd.) (to 3½")	—	2.65	3.25	5.25
Double Retaining Ring	.85	.85	.95	1.50
Leather Filterbank holds 6 filters, closeup lenses	1.00	1.00	1.25	1.50
If bought with $5.00 worth filters, closeup lenses	.50	.50	.50	.50

ALL CLOSEUP LENSES FIT STANDARD FILTERHOLDERS

Shipping Charges 1-4, 10c

6-PC. EXTENSION TUBE SET

FOR EXAKTA, EXA. Set contains two precision-fitted brass adapters and four tubes, 5mm, 15mm, 30mm and 45mm, providing the greatest possible range of closeup work from a 3.4 reduction to a 2.2 magnification ratio. *Shipping Charge 35c.* **$7.95**
6 pc. set but with one FOCUSING TUBE from 40mm to 55mm, alone a $10 value. Complete set $11.50. Leather Pouch .98
EXTRA 45mm TUBE $3.50 2 in 1 Adapter, makes 5mm ext., reg. $10 $4.95

4-PC. EXTENSION TUBE SET

for Praktica, Praktiflex FX, Contax, S, D, DA, Pentacon **$6.95**

This exceptionally well-made set includes in addition to the usual 5mm, 15mm and 30mm tubes a 45mm tube, thus permitting up to 2X magnification, when the complete set is used: a tiny object, ½" x ¾" can be made to fill the entire 35mm negative or transparency! *Sh Ch 35c.* **EXTRA 45mm TUBE $3.50** Leather Pouch 99c.
4 pc. set, but with one FOCUSING TUBE, alone a $10.00 value, increasing maximum extension to 100mm. **$9.95**

PROXISCOPE SR.

WITH ELEVATING ACTION **$4.95**

An absolute must for any kind of closeup and copy work. Doubles up as perfect elevating attachment, with both tripod and camera fittings for horizontal as well as vertical fastening of camera.

- **A deluxe version of the most useful camera accessory for every practical photographer.**
- **Permits minute adjustments in a 4½" range on its geared track, with a positive lock at any desired point.**

Shpg. Chg. 50c

CONTINUOUS FOCUSING AND 135MM TELEPHOTO OUTFIT

From 16" to infinity, with your EXAKTA, PRAKTIFLEX, PRACTICA, CONTAX S, D, DA, PENTACON.

$34.90 COMPLETE Outfit includes genuine Folding Bellowscope, 135mm f:4.5 coated lens with clickstops, Proxiscope Sr.—the most versatile equipment you can get for your camera. *Sh. Cost $1.00*

From 12" to infinity, with your LEICA*, CANON. **$73.95 COMPLETE** *Sh. Cost $1.00*

Outfit includes famous Accura Reflex Housing with waist and eyelevel finders, genuine Folding Bellowscope, 135mm f:4.5 coated lens with clickstops — a complete reflex focusing and composing, close-up to infinity, telephoto outfit for less than the cost of a good lens alone! ***for M3, $7.50 add'l**

EXAKTA, PRAKTIFLEX, LEICA owners ALL METAL LENSCAP WORTH $1.00 **25¢** with your order for $3.00 worth or more, merchandise.
Choose body or rearcap, or front cap for Tessar, Biotar, Westanar. Be specific! One to a customer—extras ea. $1.00.

BRAND NEW LENSES — ACCESSORIES for critical LEICA, CANON owners

135mm f:3.5 Tele, rf-cpld, ctd	$39.95
35mm f:3 Wideangle, rf-cpld, ctd	39.95
135 Suede Lens Pouch	1.98
35-50mm Suede Lens Pouch	1.25
Leica M3 Adapters, specify 35-50mm, 90mm, 135mm, each	5.00
Rapid-Wind Attachment	3.95
Deluxe Metal Cassettes for all models Leica, 2 for $4.15; 5 for	10.00
Zoom Finder, 28mm to 135mm, w. case	14.95
10" Cable Release, with setscrew	.95
20 ft. Remote Control Release	4.23
Time Exposure Device, ½ to 11 seconds	3.24
Focusing Extension Tube, for closeup work	5.95
Accura Reflex Housing, w. Folding Bellowscope, Eyelevel Finder, 135mm f:4.5 lens	73.95
Coated Screw-in Filters, Closeup Lenses, name color, state lens, ea. $2.98, 3 for	8.49
Flash Synchronizer, for old models, with BC Fanflash	8.39
Universal Turret Finder, 35, 50, 90, 135mm	12.95
Lens Rear or Leica Body Cap	1.00

TIME EXPOSURES $2.99

½ SECOND TO 11 SECONDS WITH EVERY CAMERA

New unit fits cable release socket, provides delayed action plus 11 slow speeds.
Leica, Yashica model—25c extra. *Shpg. Chge. 10c*

CLOSEOUT SALE — Save up to 75% on SERIES V FILTERS from 49c

Finest quality optical glass, without ring, fit standard Series V adapter. Yellow, 85C, haze, each **79c**. Green, red, UV16, 80B, 85A, each **49c**. Polarizing, **$1.49**.
Minimum Order $2.00 *Sh. Ch. 10c*

Best POCKET FAN FLASH Value Ever!

Extra large 6", 15 blade reflector; bladeholder; 2 positions—for regular and for M2, M25 lamps; extra-long interchangeable coiled cord (for bounce flash!); long-life 200 mfd capacitor; pushbutton ejector; bulb-battery test system built-in; extremely compact—4"x1¾"x1½"; top-grain leather zipper carrying case attached to camera case strap; simplified exposure dial eliminates guess work; fits camera accessory clip or bracket.

OPEN — CASE — CLOSED

All this for only $5.99 **for standard PC or ASA synch terminals**

Bracket for use of gun on side of camera **$1.00**; BC battery lasts full year **$1.00**; synchronizer for old cameras **$2.49**. For Argus, Leica, Exakta, Practica, Polaroid etc., synch fittings, add **$1.00**. *Shipping Charge 35c*

2-IN-1 TOPGRAIN LEATHER GADGET BAGS

ANOTHER SPIRATONE EXCLUSIVE *Sh. Wt. 3, 4, 5 & 6 lbs.*

Actually two bags—use outside pocket only when needed, or separately; also as an elegant lady's bag. Luxurious velveteen lining, inside pockets for filters, meter etc., wraparound zipper, adj. straps, chrome hardware and trim — truly the finest gadget bags under $25.

2-in-1 Standard, 10x8x4"	7.50
2-in-1 Medium, 11x8x5½"	9.50
2-in-1 Extra large, 12x9x6"	11.50
2-in-1 Professional, 16x11x6"	14.50

A DREAM COME TRUE! POCKET ELEVATING STYLE TRIPOD

Model EL-8P $8.66 INCLUDING PANHEAD *Luxurious Leather case $1.79 extra.*

The two most desirable features incorporated into one tripod.
8 sec. pocket size (only 11") and (8" rise) elevator action, with a positive lock. Ribbed top section, chrome plated brass legs extend to 44" (+ elevator), single action 90° tilt and panhead—ideal for every movie, twinlens, 35mm fan. A $20.00 value. *Shpg. Wt. 3 lbs.*
For "**Quick**", Panhead, with rapid camera on-off feature, a $4.50 value, only **$1.46** extra.
GEARED DRIVE MODEL, ask for model EL-8PG and add 88c to cost.

3 UNIT REFLECTOR OUTFIT $5.99

- **Two aluminum 10" reflectors for #1 or #2 bulbs**
- **One bullet reflector for spot effects**

All three complete with swivel joint, switch, socket, clamp and cord . . . at a fraction of their usual cost. *Shipping Weight 7 lbs.*
SUGGESTION: 2 #2, 1 #1 photoflood bulbs 99c.

FREE with $5.99 or $7.89 outfit. **DIFFUSER SHIELD,** for flood and flash, sells everywhere for $1.44. Clips onto bullet reflector or flashgun for those beautiful soft portraits.

HI-LO DIMMER SWITCH $1.98

Compose and focus in comfort, save electricity, prolong bulb life, retain subject's natural expression. Nothing like it under $6.00. **When bought alone $2.98.**
IF BOUGHT WITH $5.99 or $7.89 OUTFIT

PHOTOFLOOD STAND PLUS TWO REFLECTORS

- **3-section metal stand extends 6'4".**
- **Sturdy, braced legs with rubber tips.**
- **Stand telescopes compactly to only 2 feet.**
- **Positive locking at any desired height.**

2 #2 bulbs 79c

The ideal indoor lighting setup. 22" crossbar, can also be used to hold screen, backgrounds. Two-spun aluminum 10" reflectors (for #1 or #2 photofloods), complete with sockets, switches, 6' cords, ball socket swivel joints, rubber jawed spring clamps. Can be used on cross bar or furniture. *Shipping Weights: Stand 4 lbs.; Reflectors 6 lbs.*

$13 VALUE $7.89 COMP **Now with new SWIVEL CROSSBAR**

Extra clamp on bullet with bulb (for semi-spot)	1.99
Extra photoflood stand with regular crossbar	3.49

FOR THE DARK ROOM

SAVE 50% ENLARGING LENSES

We are proud to present three unusual values in brand new, coated, color-corrected, anastigmatic lenses, specially constructed to give corner to corner sharpness in enlarging—at prices half and less than those you'd expect to pay for such sharp-cutting lenses. *Sh. Ch. 25c*

2" f:3.5, clickstops, for 35mm	$7.95*
3½" f:4.5, clickstops, for 2¼x3¼", 2¼x2¼"	9.95*
5¼" f:4.5, clickstops, for 4x5	19.95
Precision Flange for easy fitting to lensboard	1.25

**Sensational, new illuminated diaphragm feature - add $1.75*

2" Dble. Condenser, for 35mm	$2.95

ONE OF THE MOST IMPORTANT "TOOLS" OF ANY PHOTOGRAPHER — CHANGING BAG

Double zippered inner and outer bags—made of the finest cloth—100% light proof even in brightest sunlight. Whether for use in an emergency, with a film torn or pulled off the spool in a 35mm camera, or for reloading cut film holders or for developing film when no darkroom is available—the changing bag is justly referred to as a "portable darkroom". 17" x 16" working space plus elastic sleeves. *Shipping Charge 25c* **$3.95**

PROFESSIONAL MODEL: 27x30" working space, $11.00 value, **$6.95** *Sh. Ch. 50c*
EXTRA LARGE MODEL: 36x44" working space. *Sh. Ch. 75c* **$9.95**

ELECTRIC 2-SURFACE ALL METAL DUO-DRIER

GIANT 13½x18" 1958 deluxe model WITH 2 12x17" HEAVY DUTY FERROTYPE PLATES **$11.98**

Yes, Spiratone does it again! A complete, ready-to-use, double surface drier with a capacity of 4 8x10 or 36 2½x3½ prints, singleweight or doubleweight, glossy or dull finish — sturdily constructed, as efficient as units costing several times as much, with adjustable apron tension. Works on AC or DC.
FREE with every dryer: Hypokei, tells correct fixing time
12"x16" STANDARD DUO-DRYER, with two 10x14" heavy duty ferroplates for the small darkroom **$8.98**
12"x16" SINGLE DRYER, with 10x14" ferroplate **$5.98**
Shpg. Wts.: GIANT 12 lbs., STANDARD 10 lbs., SINGLE 9 lbs.

11x14 EASEL

Spiratone priced at **$4.50**

- Spring steel masking bands.
- Adjustable for all sizes from 1x1" to 11x14"
- Variable margin
- Extra sturdy (net wt. 3¾ lbs.!)

Shipping Weight 6 lbs.
8x10 Enlarging Easel, same construction as above, Spiratone priced at **$3.50**

SELF-LOADING DEVELOPING TANK

ADJ. FOR 35MM, 828, 127, 120, 620, 116, 616. **$2.49**

Simple bayonet lock for different size adjustments. Vents for quick changing of liquids. Agitating rod. Jamproof reel loads in seconds in darkroom —other operations in daylight. Transparent —for color. Uses only 8 oz. for 35mm. Easily worth double. **Tank with spare reel, $3.95.** *Shpg. Wt. 2 lbs.*

4½" Diameter SAFELIGHT

Screws into dropcord or outlet. With one filter (specify red, orange, green, Varigam) **$2.49** *Ship. Wt. 3 lbs.*
Extra filters 59c each

ENLARGING TIMER $6.95

60 sec. range, with second markings. Current shuts off automatically at end of desired time interval. Built-in lock holds knob at desired position, until toggle is released. Adjustable stop for repeat exposures. Manual operation for focusing. Enlarger or printer plugs right into receptacle on cord timer. *Shpg. Chge. 40c.*

8x10 ENAMEL TRAYS 3 for $3.98

FREE WITH TRAYS: Deckle Edge Trimmer!

You'd expect to pay over **$2.00** each for these acid-proof trays which Spiratone offers you at less than half the regular value! *Sh Wt. 5 lbs.*
16" x 20" ENAMEL TRAYS (Suited for 14x17, smaller sizes) **$3.95 each 3 for $9.95** *Shpg. Wt. 5 lbs., (3) 12 lbs.*

ENLARGER FOCUSING AID

$1.00 A $2.25 value. *Sh. Ch. 15c*

Stainless Steel Film Clips, 4 for $1.00; Funnel, 19c; 10" Print-tongs, Pr. 59c; Film Squeegee, 89c

SPIRATONE SAVES YOU 50% DELUXE PRINT TRIMMER 10" MODEL

An efficient paper cutter, with ruled hardwood board, hollow-ground, hardened steel knife on spring. *Shpg. Wts. 5 lbs. & 7 lbs.* **$3.98**
14" Model $5.98
FREE with trimmer, deckle edge cutter!

$60.00 VALUES—SPIRATONE EXCLUSIVELY OFFERED ENLARGERS — EITHER MODEL $29.95

35 MM

- Glassless carrier for single negatives and rolls, ingeniously designed for scratchproof operation.
- Illuminated Diaphragm Clickstop lens, 50mm f:3.5.
- 12 x 16" Baseboard.
- Double Condenser included in cost.
- Easy lifting parallel arm system.
- Red Filter.
- 24", ⅞" diameter Pole.
- Bellows, fine rack and pinion focusing.
- Lineswitch.
- All metal construction.

2¼x2¼" 2¼x3¼"

- Glassless carrier, specify 2¼x2¼ or 2¼x3¼—extra carriers, also 35mm, $3.50 each.
- Illuminated Diaphragm Clickstop lens, 90mm f:4.5.
- 12 x 16" Baseboard.
- 4½" Double Condenser, available at $6.98.
- Easy lifting parallel arm system.
- Red Filter.
- 19", 1½" diameter Pole.
- Bellows, fine rack and pinion focusing.
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PETRI 1.9 AUTOMATE

THE PETRI 1.9 is a brand-new, and much-improved big brother to the Petri 2.8 described on page 50. Its lens is a 45-mm Orikkor f/1.9 composed of seven elements. The shutter is the 1 to 1/500-sec speed Copal MXV.

Other major improvements include an enlarged single-window range-viewfinder with an illuminated frame line, a smoother, quieter single-stroke advance lever with a ready position which places the operating end away from the rear camera wall for ready access, an automatically self-starting film counter and a folding rapid rewind crank of relatively large radius which is one of the best we've seen.

The Petri 1.9 Automate, like the 2.8 model, is notable for its extremely handsome styling as well as for smooth operation and rugged construction.

(A third Petri model, the f/1.9 Super, arrived too late for a thorough examination. The Super features a six-element f/1.9 lens for $69.95, with a smaller combined range-viewfinder window than the f/1.9 Automate.)

FEATURES

- Seven-element 45-mm Orikkor f/1.9 lens focuses down to 2.8 ft.
- Copal MXV shutter has speeds from 1 to 1/500 sec and Bulb, self-timer.
- Combined view-rangefinder window with illuminated bright-line frame.
- Single-stroke rapid-wind lever, film rewind crank.
- Smooth shutter release, automatic-resetting frame counter.
- Price: $99.50, case $12.50.
- Importer: Petri Camera Co., 11 W. 20th St., New York 11.

TWO WALZ 35-S CAMERAS

TWO VERSIONS of the Walz 35-S, identical in all respects save their optical equipment, are now being distributed throughout the U. S. The optical choice consists of the seven-element S-Kominar 48-mm f/1.9 or the Walzer 45-mm f/2.8 lens.

Focusing is by means of a large single-window range-viewfinder with an etched frame line and a handily contrasty gold-toned rangefinder patch. The large viewfinder window is slightly hooded with a black plastic material which serves as a shield against light from above.

The film transport consists of a single-throw thumb-lever with an extremely short stroke, about 120 degrees. The automatically self-starting frame counter is unconventionally positioned on the extreme right-hand-side of the top camera panel next to the rewind knob. This equally unconventional knob splits apart to become a highly effective rapid-rewind crank by means of a combined twist and push that's a lot easier to do than to describe. The shutter release is centered at the pivot point of the advance lever and is extremely crisp. A dot indicator to the left of the release button turns red when the camera is ready for firing, flashes white after each exposure. The backs are hinged to swing wide open for easy loading, and a generously proportioned pressure plate is provided.

Beautifully styled, and apparently extremely well constructed, the Walz 35-S cameras offer most of the advantages incorporated into top-bracket equipment. Walz cameras are manufactured by the Walz company of Tokyo, Japan.

FEATURES

- S-Kominar 48-mm f/1.9 seven-element lens on Walz model shown above. Second model, with identical shutter and body, has Walzer 45-mm f/2.8 lens.
- Copal MXV shutter has speeds from 1 to 1/500 sec, Bulb, and self-timer.
- Combined viewfinder-rangefinder window has illuminated bright frame lines.
- Short one-stroke advance lever pivots around shutter release button.
- Automatic-resetting frame counter, film rewind crank.
- Price: With f/1.9 lens, $99.50. With f/2.8 lens, $69.95. Case $12.50.
- Importer: U. S. Photo Supply Co., Inc., 6478 Sligo Mill Rd., Washington 12, D. C.

WHAT'S NEW continued on page 58

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All film and paper in this ad outdated gov't surplus and guaranteed by us 'til Feb. 1959.

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Warehouse Clearance of amazing enlarging paper. Aero enlarging is single weight, semi-matte grade 1, 2, 3, 4 (specify). Cut 240 8 x 10's per roll. Worth $30.00 when cut. Three for $12.95. Ship. 10 lbs. each

9¾ x 400 ft. VARIGAM, eliminates necessity of stocking several grades. Cut 480 sheets per roll. Single weight, semi-matte 8.95

Ship. wt. 18 lbs. each

EACH **4.89**

35mm BLACK & WHITE FILM

Guaranteed By Us 'til February, 1959

35mm x 100 ft. Kodak Plus-X
35mm x 100 ft. Super XX
35mm x 100 ft. Infra-Red
35mm x 100 ft. Ansco-Supreme
35mm x 100 ft. Ultra-Speed

2.25

Any 3 5.50 plus 25c post

35mm x 100 ft. Tri-X 2.45
35mm x 200 ft. Super XX 3.25
35mm x 200 ft. Shelburst Pan .. 2.30
35mm x 200 ft. Background-X .. 2.30
35mm x 400 ft. Ansco Supreme .. 5.95

Add post & handling

35mm ANSCO COLOR

Guaranteed by us 'til February, 1959

35mm x 36 EXPOSURE
Daylight or Tungsten reloads **99c** EACH

Minimum order 5 for 4.95 45c post & handling

SIZE	TYPE	EACH	3 FOR
35mm x 50 ft.	Day or Tung	6.50	19.25
35mm x 100 ft.	Day or Tung	10.50	31.00
35mm x 20 exp.	Day or Tung	.79	5 for 3.95

Add post & handling

8 & 16mm MOVIE FILM

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Short ends from major manufacturer's loads for Air Force cameras.
WITH FREE PROCESSING.
8mm Minimum order five for ..4.95 plus 45c post and handling

99c PER ROLL

SIZE	TYPE	5 FOR	10 FOR
16mm x 100 ft.	Ansco Hypan	9.75	19.35
16mm x 50 ft. mag	Ansco Hypan	9.39	18.49
16mm x 100 ft.	KODACHROME	6.95 ea.	3 for 19.50

Prices F.O.B. add postage

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Daylight or Tungsten. Guaranteed good film and useable to February 1959. 10 sheets. **1.95**

30 sheets 4.95, 45c post and handling.
50 sheets 8.25, 55c post and handling.

4 x 5	TRI-S ORTHO	100	5.75
5 x 7	SUPER-HYPAN PRESS	50	4.95
8 x 10	ANSCO COLOR	20	7.90
14 x 70	MATRIX	12	4.80
20 x 24	ANSCO REPROLITH	25	19.75

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7" f2.5 AERO EKTAR

For Exakta, Leica, Contax, Speed Graphic, etc. All types of movie cameras. Custom-made adaptors available. Gov't surplus. USED **29.95**

1.75 post & handling

Extension tubes, lens board and bed-brace for 4 x 5 ..... 17.95

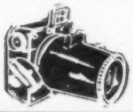
K-20 AERIAL CAMERA

6⅜" f4.5 LENS

Full range of shutter speeds to 1/500. Rapid sequence pix on 4x5 negative. Hand held manual operation. Gov't surplus. Used **69.50**

Case 5.95 shpd express

F-8 AERIAL CAMERA



15" f5.6 LENS

Hi-Speed focal plane shutter. Takes 50 pix on 7" x 25' film. Gov't cost many times our low price. Gov't surplus. Shp wt 38 lbs. F-8 camera with 10" f4.5 coated Bausch & Lomb lens 189.50

179.50

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4 x 5	Single weight semi-matte	250	2.95
8 x 10	Single weight semi-matte	100	3.45
8 x 10	Single weight glossy	100	4.40
10 x 10	Single weight semi-matte	250	7.50
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20x24	Single weight semi-matte	1	72	6.60
24x30	Single weight semi-matte	1	100	19.50

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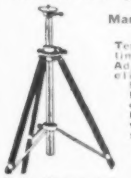

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Brand-New **6.95**

Note: Shown not fully extended

85c shpg

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20x50 PRISM BINOCS (The most powerful hand-held) 29.95
Case 5.50 • 10% FET • 1.25 post

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2" f3.5 German Steinheil, NEW .. 12.95
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7.5mm f2.5 WIDE ANGLE

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P-6

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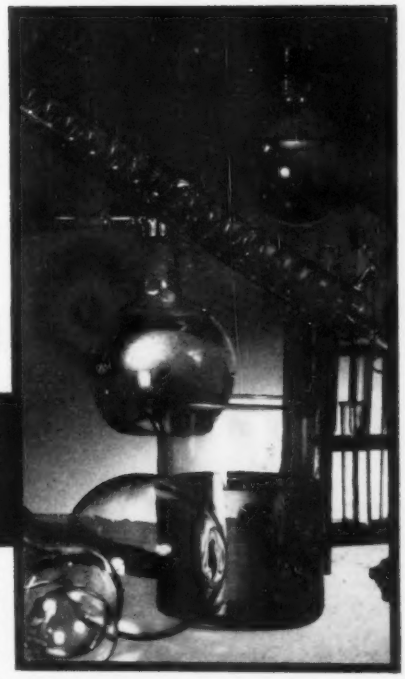

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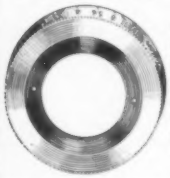

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Tiffen FILTER ACCESSORIES FOR ALL CAMERAS

PAXETTE AUTOMATIC SUPER III

THE PAXETTE AUTOMATIC is the first camera to combine the advantages of a coupled rangefinder and lens interchangeability with a built-in, internally linked exposure meter for automatic determination of exposure, a system originally introduced in the Agfa Silette SL.

Following the same basic approach as the Silette, the Paxette Automatic has cross-coupled shutter and diaphragm controls linked to a movable index of the camera's built-in exposure meter. The method of operating includes four simple steps:

1 The meter is set for the film's ASA exposure index by means of a scale (engraved with values from 10 to 640) on the underside of the camera's lens barrel.

2 The photographer selects an appropriate shutter-speed.

3 The meter is pointed at the subject for a conventional brightness reading, and the needle is allowed to come to rest.

4 The diaphragm control ring is rotated until a diamond-shaped index marker on the meter face is aligned with the indicator needle. If the resulting camera setting involves too large or too small a lens aperture, this may be changed by rotating the shutter-speed ring which, by means of cross-coupling, will give the appropriate speed for any aperture desired. In addition, the photographer who disagrees with the metered exposure can make any desired adjustment by holding either control and changing the other.

A choice of four 50-mm lenses is supplied with the Paxette Automatic: Two *f*/2.8 four-element lenses and two six-element *f*/1.9s; an Enna and Steinheil lens in each speed. Enna accessory lenses available are a 35-mm *f*/3.5 wide-angle, as well as 90-mm and 135-mm *f*/3.5, and 200-mm *f*/4.5 long lenses.

The between-the-lens diaphragm mounted in each lens couples as the lens is bayonet-mounted to the camera body, linking diaphragm, exposure meter, and shutter.

Located behind the interchangeable lenses, the shutter is a Prontor SLK, with speeds from 1 to 1/300 sec, and cross-coupled in exposure value style with the diaphragm. Since the linked meter transfers exposure readings directly to the lens-shutter settings, EV numbers are not provided.

The two Steinheil lenses incorporate two noteworthy features. A pair of red pointers, one on either side of the footage index mark, move automatically as the aperture is adjusted to indicate depth of field. The second feature, a sliding ring on the lens mount, provides an ingenious new approach to flash exposure, automatically translating guide numbers for one ASA film speed to any other, then reading directly in *f*-stops opposite the lens distance scale.

Focusing and framing is accomplished through a single eyepiece with illuminated frame-lines provided for the 50-, 90-, and 135-mm focal lengths. The diamond-shaped rangefinder patch is centrally located and all focal lengths couple automatically.

A two-stroke lever transports the film and resets the shutter. Built into the camera body, this lever is located approximately ½ inch below the top plate on the right-hand side of the camera. Rewinding is accomplished by means of a similar lever located at the left-hand side of the rear camera panel. To operate, the rewind button is held down with the thumb of the right hand and the lever is pumped with the left-hand thumb until the leader is felt to pull away from the camera's fixed take-up spool, a somewhat lengthy procedure.

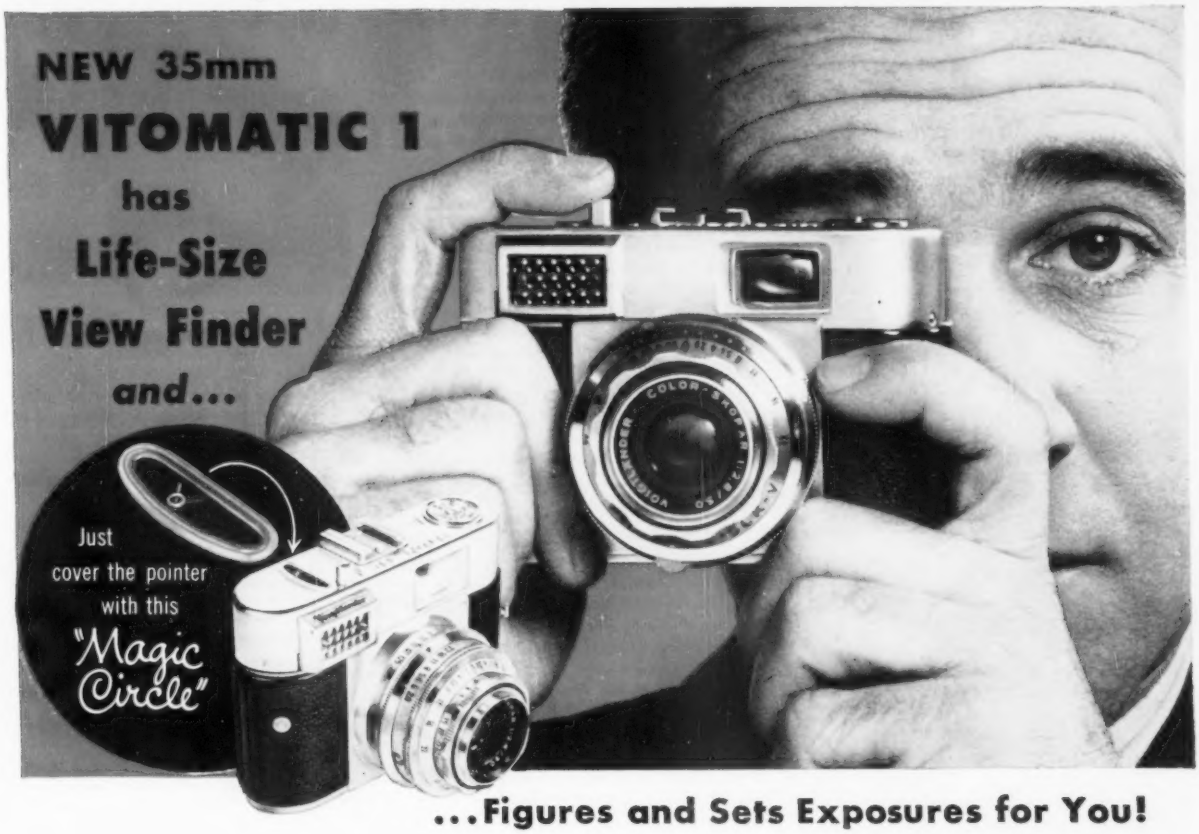
The Paxette Automatic Super III is made in Western Germany by Braun of Nurnberg (not to be confused with Braun of Frankfurt who make the Braun-Hobby electronic-flash units).

FEATURES

- Exposure meter is linked to diaphragm and shutter-speed controls — aligning two meter needles sets exposure directly.
- Combined range-viewfinder has illuminated frame lines for 50-, 90-, 135-mm lenses. Entire finder image frames for 35-mm lens.
- Lenses are interchangeable, couple to rangefinder and exposure meter. Standard lens is 50-mm *f*/2.8 Color-Ennit, with option of 50-mm *f*/1.9 Steinheil or Enna lens. Accessory lenses from 35- to 200-mm are available.
- LVS-coupled Prontor SLK behind-the-lens shutter has speeds from 1 to 1/300 sec, Bulb, self-timer, M and X synchronization.
- Two-stroke rapid wind lever, unique film rewind lever.
- Price: With 50-mm *f*/2.8 Color-Ennit lens, $149.50; case, $10.95.
- Importer: Burleigh Brooks, Inc., 10 W. 46th St., New York 36. West Coast Distributor: Ponder & Best, Inc., 814 N. Cole Ave., Hollywood 38, Calif.

WHAT'S NEW continued on page 60

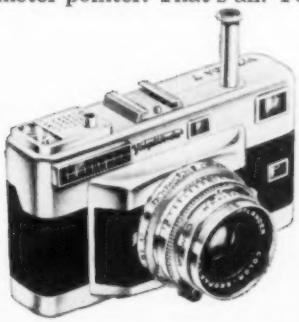
Both Eyes Open—No Arithmetic!



...Figures and Sets Exposures for You!

VITOMATIC 1 Now, kiss the complications goodbye! The wonderful new Voigtlander Vitomatic 1 brings you a long awaited development in picture-taking ease. No need to figure f. stops or light value numbers. No need to figure at all! Just move the setting ring on the lens so the magic "Magic Circle" covers the exposure meter pointer. That's all. You're ready to shoot!

Want more? You get it!—*all* these great features: *lifesize* super bright-line viewfinder. World famous 50 mm Color Skopar f.2.8 lens, specially ground for color. Fast single stroke film wind. Automatic pop-up rewind. Exclusive SLK-V shutter with 9 speeds: 1 second to 1/300. The outstanding quality camera value in America! See the new Vitomatic 1 at your photo dealer today. $89.50



VITESSA T

Voigtlander's rapid action 35mm camera, with simplified LVS exposure control. Designed to take interchangeable lenses—35, 50, 100, and 135mm. Nothing has been left out of this beautiful instrument. Built-in exposure meter, coupled range finder, viewfinder with automatic parallax correction, exclusive plunger type fast film transport, automatic double-exposure prevention and film lock, and moving depth of field indicators.

Comes with a 50mm Color Skopar f.2.8 lens in Synchro-Compur L Shutter. The Vitessa T makes it so easy to do so much in the wonderful world of color! Your photo dealer will show you. $154.50. Also in the Voigtlander *Family* of Quality Cameras, models from $45.50 to $279.50.

The camera with the eye for COLOR

VOIGTLANDER

SINCE 1756 • SAY PHŌT-LANDER • H. A. BOHM AND COMPANY, SOLE AMERICAN IMPORTERS, 4761 W. TOUHY, LINCOLNWOOD, ILL.

Yes...

With a Built-in Exposure Meter

plus

Coupled Rangefinder and

All The Other Amazing Features of the

SAMOCA

35mm Precision Camera for only

39.95

Over 200,000 satisfied SAMOCA owners say, "It's a lot of camera for the money." In these three great models, with luxury features, you get even greater value.

Sensational SAMOCA Series X

SAMOCA 35X . . . with built-in exposure meter and 50mm f/3.5 lens.....$39.95

SAMOCA 28X . . . with built-in exposure meter and 50mm f/2.8 lens.....$49.95

SAMOCA RF 35 . . 50mm f/3.5 $29.95

The rugged, sensitive SAMOCA Exposure Meter is accurately calibrated for ASA 6 to 1600, lens steps f/2.8 to f/22, shutter speeds 1/10th to 1/200th.

All 3 SAMOCA Models Feature:

Coupled Rangefinder • Single Window Rangefinder-View-finder Shutter Speeds 1/10th to 1/200th and Bulb • Full MX Synchronization • Built-in Depth-of-Field Scale • Automatic Film Advance, Shutter Cocking and Exposure Counter • Body Shutter Release • Removable Back • Click-stopped Lens Diaphragm—Smart, Compact, With Satin Trim and Anodized Finish.

See Your Dealer or Write for Literature

BROCKWAY CAMERA CORPORATION

1114 First Avenue, New York 21, N. Y.

Canada: Precision Cameras of Canada Ltd. Montreal, Toronto, Vancouver

ARGUS MATCH-MATIC C3

THE MATCH-MATIC C3 is a dressed-up new model of the familiar Argus C3, which has plugged along with unprecedented popularity in the medium-price 35-mm field, virtually unchanged since its introduction nearly twenty years ago.

Major change in the new model is the complete elimination of conventional shutter speed and *f*-stop markings. Instead, lens and shutter settings are marked in single-digit numbers. Argus feels that the new numbers, actually a variation of the exposure value system, will greatly simplify the complexities of exposure settings for the vast majority of C3 users.

The numbers are read right from the new Argus exposure meter now standard equipment with the C3, which slips into the accessory shoe atop the camera. Typical meter reading on a bright day might be a lens setting of 6, and a shutter setting of 7. (The sum of these is the exposure value, 13, for this particular film-light intensity combination, but no mental calculation is required with the Match-Matic system.) Reference to the instruction book reveals these numbers to be, in conventional designations, *f*/8 at 1/125 sec.

Lens openings on the C3 Match-Matic are marked 3½, 4, 5, 6, 7, 8 (*f*/3.5 to *f*/16); shutter speeds designated 4 through 8 (1/10 to 1/300 sec). To aid in selecting the best shutter speed for the scene being photographed, the shutter speed dial is marked, in addition to the numbers, "scenes" and "action."

Flash exposure has been simplified also. Lens settings at various distances may be read from a special scale on the rangefinder's footage dial.

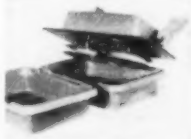
While the workings of the C3 remain the same, its appearance has been improved with handsome gray and black leather panels. In addition, the lens barrel has been extended to provide a built-in lens shade, and incorporates a filter holder for Series V filters. Lens interchangeability has been retained, with C3 35-mm and 100-mm accessory lenses fitting both old and new models.

FEATURES

- Conventional shutter speed and *f*-stop markings replaced by simple single-digit numbers.
- Exposure meter slips into accessory shoe, reads in these numbers.
- Cintar 50-mm *f*/3.5 lens, marked in numbers 3½ to 8, has built-in lens shade and filter holder, may be interchanged with 35-mm and 100-mm *f*/4.5 accessory lenses.
- Behind-the-lens shutter is marked 4 through 8 (1/10 to 1/300-sec speeds) and Bulb. X synchronization.
- Separate viewfinder and coupled rangefinder windows.
- Price: $74.95, with exposure meter, case, and flash unit.
- Made by: Argus Cameras, 405 Fourth St., Ann Arbor, Mich.

For reports on the Bell & Howell Auto Load and the Argus M500, two new 8-mm movie projectors with unique features, see page 154.

MISCELLANEOUS

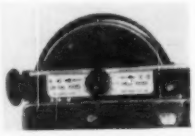


MICRO RECORD MOVIE FILM processing equipment is announced by Micro Record Corp., 487 South Ave., Beacon, N. Y. Model D 31, an automatic electrically operated daylight developing tanks for 8-, 16-, and 35-mm film has separate tanks for each solution. Price, $390 (110 volts a-c) and $405 (220 volts). Micro Film Dryer rotates film over a strip heater; drying time, about 10 min. Model DR 10 takes 100 ft of double 8- or 16-mm film or 50 ft of 35-mm film; price, $75; case, $21. Model DR 15 takes 200 ft of 16-mm or 100 ft of 35-mm film; price, $86; case, $21. Model DR 20 takes 400 ft of 16-mm, 200 ft of 35-mm, or 100 ft of 70-mm film; price, $137; case, $37.50.

FILM MASTER is a new projection screen introduced by Radiant Mfg. Corp., Box 5640, Chicago 80. The glass-beaded surface is mildew- and flame-proof and is claimed to be more white and remain whiter longer. For showing movies, the screens are convertible to oblong format. Available in eight sizes from 30x40 to 70x70 in., prices range from $24.95 to $53.95.

POLAROID PROJECTOR owners who also wish to project 35-mm slides can adapt their projectors with the Polaroid 35-mm Slide Changer (Model 613). Manually operated, it is priced at $4.95. Manufacturer is Polaroid Corp., Cambridge, Mass.

PERMA-NAME metal identification plates have a pressure sensitive backing and are easily attached to a camera, gadget bag, and other camera accessories. Lettering is gold on black aluminum. Plate size is 1x2½ in. With 3 lines per plate (20 letters to a line), price is 2 for $1.50, ppd. Home Stationery Shop, Bath, Ohio.



DUAL POWER MAGNIFIER VIEWER for the Bolex Reflex movie camera enables the cameraman to pinpoint focus with any lens and increases the field size from 8X to 16X magnification. It is attached to the camera viewfinder, making little change in appearance of the original viewer. Full details available from Pellegrini-Piek, 1545 Lombard St., San Francisco 23.—►

SPECIAL! ARCO 35mm AUTOMATIC
BRAND-NEW, COMPLETELY AUTOMATIC FOCUSES DOWN TO 14"
Arco f:2.4, 5cm, 5 element hard-coated, color corrected, lens. Built-in rangefinder and double-exposure prevention device. Rapid film winding lever. Fully synch. "Seikosha-MX" shutter with 9 accurate speeds of 1, 1/2, 1/25, 1/50, 1/10, 1/250, 1/500, 1/100, 1/2 sec. and Bulb.
49.95 SAVE $50 Japan Import

Image Erecting Type Finder
For all 35mm Cameras
Brightest, clearest, exact parallax-corrected field of view for 35mm, 50mm, 85mm, 90mm, 105mm, 135mm.
Reg. 42.00 Brand-New Only **$19.95** with cowhide case
Made in Japan

RITZ CAMERA CENTERS

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The Ritzcount price means that you buy everything brand-new at the lowest possible price . . . and you must be completely satisfied or your money will be returned for any reason whatsoever after a 30-day trial. Buy under the Ritzcount No Risk Purchase Plan. Run to Ritz for the best buys. Quantity buying for our many stores brings you lower prices, longer guarantees.
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Only Ritz offers these GUARANTEED Price Quotations! Highest Trade-in allowances and Lowest Selling Prices. Save Tremendously on New and Used Equipment.

1. Select equipment you want at price shown in column one.
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3. Rush your order (and trade in equip. if you have such) plus your remittance . . . or instructions to ship COD for balance.

RITZ will immediately forward the equipment you desire. Our famous 30 DAY MONEY BACK GUARANTEE AND ONE YEAR SERVICE GUARANTEE ASSURES YOU COMPLETE SATISFACTION.
U After Price Denotes, USED when available. CC Denotes Carrying Case

LaBelle "Professional" 75 AUTO PROJECTOR

Brand New Entire Factory Closeout 500 Watt push button 2 x 2 Auto Projector. Holds up to 150 slides in one loading! Can be used with La Belle Control Recorder for completely automatic synchronized shows. Prewarming chamber reduces "Slide Popping." Complete with cords, turbine blower, case and pr. 75 capacity 6" mags. Film Strip adapter available.
REG. 154.50
RITZ EXCLUSIVE..... **$99.95**

LENS FOR 8mm CAMERAS

7mm F2.5	12.95
13mm F1.9	12.95
38mm F2.5	10.95
38mm F1.4	19.95
38mm F1.0	39.95
75mm F2.5	20.95
75mm F2.5	20.95
75mm F1.9	26.95

LENS FOR 16mm CAMERAS

17mm F2.7	17.95
75mm F2.5	20.95
75mm F1.9	24.95

ASK FOR FREE LENS BOOKLET

KODACHROME FILM WITH PROCESSING INCLUDED AT 25% DISCOUNT

FACTORY PACKED, FRESH FILM WITH PROCESSING INCL.
Enjoy Convenience of Mailing Exposed Film and its Speedy Return to Your Own Mail Box. DAYLIGHT OR TYPE A—FACTORY PACKED—FRESH FILM—1 YEAR DATING

35mm KODACHROME
TYPE F OR DAYLIGHT

	Price List	Our Discount Price
20 Exposures:		
1 Roll	3.35	2.49
3 Rolls	10.05	7.90
5 Rolls	16.75	12.75
10 Rolls	33.50	24.50
36 Exposures:		
1 Roll	5.10	4.19
3 Rolls	15.30	11.55
5 Rolls	25.50	18.75
10 Rolls	51.00	35.95

35mm Stereo Kodachrome Includes Processing & Stereo Mounting

15 Stereo Exposures:		
1 Roll	4.10	3.29
3 Rolls	12.30	9.20
10 Rolls	41.00	29.50

MOVIE KODACHROME
TYPE A OR DAYLIGHT

	Price List	Our Discount Price
8 mm Roll		
1 Roll	4.00	3.09
3 Rolls	12.00	8.95
10 Rolls	40.00	28.99
8 mm Magazine:		
1 Mag.	5.00	3.95
3 Mags.	15.00	10.95
10 Mags.	50.00	35.55
16 MM 100' Roll		
1 Roll	11.20	8.50
3 Rolls	33.60	24.95
5 Rolls	56.00	39.99

Please Include 5¢ Per Roll Parcel Post Charges with Your Order.

RETINA IIIC

Cpld. Rfdr. F2 Ctd. Schneider Xenon Compur Rapid. LVS 1/500.
Special NEW **$99.50**
Retina Longar Tele lens...59.00
Retina Curtar W.A. lens...49.00
Universal Finder.....11.50
Metal Lined Carrying Case.10.00
Flashgun.....6.95

HIGH SPEED TELEPHOTO LENS

For Exakta, Pentacon, Etc. 135mm. F2.8 Ultra Speed ctd lens with Preset spring Diaphragm. 4 Element.
REG. 89.50 NEW **39.50**

FULLY AUTOMATIC WIDE ANGLE LENS

35mm. F3.5 Ctd. 6 Element for EXAKTA Reg. 98.50
NEW **59.00**

Famous German Import 400mm f5.5 P.S. TELE LENS!

99.00
For Exakta, Pentacon, Hasselblad, Praktina, C mount 16mm movie, Leica, Contax, in focusing mount. Custom Adapter For Your Camera..... **$8.00**

NEW 1958 EXA OUTFIT

Exa Camera with F2.8 Westar lens, waist level Finder, 100mm. F4.5 Ctd. Iscor Tele lens, Carrying case, Exposure Meter, BC Flashgun.
New..... **$89.50**
Same Outfit with Penta Prism Rfdr.....$99.50

8mm MATCHED LENS SET

Guaranteed Top Quality. Needle Sharp and Precision Made. Click Stops. Regularly Sells for Double the price.
6.5mm W.A. F1.9 ctd.
38mm. TELE. F1.9 CTD.
Complete Set NEW..... **$29.50**

BRAND-NEW CANON VT

DeLuxe Body with NEW f1.2 Hexanon lens, 3 filters, extra finder, complete.
Reg. $495..... **$298**

"STARLINE" REFLEX CAMERA

F3.5 ctd Kominar lens, Flash Synchro. 1 sec to 1/300. Auto Film counting and film stop. Platform focusing and built-in accessory shoe for clip on access.
Reg. 49.95
RITZ EXCLUSIVE... **$29.50**

RITZ'S BEST 35mm VALUE

The manufacturer made us promise not to hint at his name. However, after one look at these specs. it won't take you long to guess.
BUILT-IN CPLD RFDR
BUILT-IN PHOTOELECTRIC EXPOSURE METER
F2.8 CTD LENS
FULL MFX SYNC.
RAPID FILM TRANSPORT
Deluxe case..5.95
Flashgun...5.95
39.95

35mm CAMERAS

	NEW	Trade-in Allow.
Argus C3 Outfit	49.00	20.00
Argus C4 Outfit	69.00	35.00
Argus C44 Outfit	83.95	50.00
Argus C44, F1.9	114.00	60.00
Aires 111L, F1.9 Case	79.00	45.00
Samoca F3.5, Case	29.00	16.00
Olympus 35S, F2.8, CC	69.00	35.00
Olympus 35S, F1.8, CC	89.00	70.00
Kodak Pony 135C	27.50	16.00
Kodak Signet 40 Flash	55.00	25.00
Kodak Retina 11C, F2.8	84.00	60.00
Kodak Retina 111C, F2	99.50	65.00
Kodak Pony II, F3.9	21.50	12.00
Kodak Pony IV, F3.5	29.00	15.00
Kodak Signet 30	41.00	20.00
Kodak Signet 50	57.00	40.00
Leica D, F3.5 Elmar	49.00 U	30.00
Leica 111a, F2 Summar	59.00 U	45.00
Leica 111C, F2 Summitar	99.00 U	70.00
Leica 111F, F2 Summicron	173.00U	150.00
Leica 111G, F2 Summicron	229.00 U	170.00
Leica M3, F2 Summicron	289.00 U	235.00
Canon IVS2, F1.8 Serenar	129.00 U	85.00
Canon VT, F1.8 Canon	179.00 U	140.00
Contax 11A, F2 Sonnar	113.50 U	85.00
Contax 111A, F1.5 Sonnar	179.00 U	140.00
Exakta VX, F3.5 Tessar	159.00	100.00
Exakta VX, F2.8 Tessar Auto.	179.00	125.00
Exakta VX, F2 Biotar	129.00 U	90.00
Exa, F2.8	54.00	30.00
Praktica FX3, F2.8 Auto Westanar	99.00	99.50
Praktica FX3, F2.8 Auto Tessar	118.00	119.50
Robot Star, F1.9 Xenon	97.00	60.00
Bolsey B2 Outfit	22.00	15.00
Bolsey Jubilee, F3.2	49.00	25.00
Ricoh 35, Case Flash	44.00	25.00
Ricoh "500", F2.8	51.50	40.00
Ricoh 519, F1.9	69.00	50.00
Lord VD, F1.9	73.50	50.00
Contaflex I, F2.8	99.50	45.00
Contaflex II, F2.8	117.00	65.00
Contaflex III, F2.8	99.50 U	80.00
Contaflex IV, F2.8	116.00 U	100.00
Nikon S2, F2 Nikkor	159.00 U	120.00
Nikon S2, F1.4 Nikkor	184.00 U	150.00
Minox IIIS, F3.5	68.00 U	55.00
Minolta A, F3.5	29.00 U	18.00
Minolta A2, F2.8	34.00 U	25.00
Minolta Super A, F2	79.00 U	65.00
Retina Reflex, F2	154.00	149.50
Neoca 11S, F3.5	39.00	20.00
Stereo Realist, F3.5	97.00	45.00
Kodak Stereo, F3.5	68.00	35.00
Revere Stereo, F2.8	127.00	60.00
Praktina FX, F2.8	129.00 U	100.00
Praktina FX, F2 Biotar	148.00 U	110.00

8mm CAMERAS

	NEW	Trade-in Allow.
Kodak Brownie, F2.7	22.00	12.00
Kodak Brownie, F2.9	36.50	20.00
Kodak Brownie, F1.9 Tur.	62.00	33.00
Kodak Med. Mag., F1.9	78.00	50.00
Kodak Med. Mag., F1.9 Tur.	118.00	70.00
Revere 88, F2.5	49.00	20.00
Revere 80, F1.9	89.00	45.00
Revere 84 Turret, F1.9	109.00	60.00
Revere 44 Mag. Turret F1.9	119.00	65.00
Wollensak 43 Turret	71.00	40.00
Wollensak 53 3, F1.9	144.00	75.00
Wollensak 23, 3, F1.9	173.00	115.00
B&H 220, F2.5	18.00 U	13.00
B&H 252B, F1.9	31.00 U	23.00
B&H 134 TA, F1.9	109.00 U	92.00
B&H 252TA, F1.9	59.00 U	45.00
B&H Electric Eye, F1.9	102.00 U	85.00
B&H 172B, F1.9	74.00 U	60.00
Keystone K27, 3, F1.9	51.00 U	40.00
DeJur Eldorado III 3, F1.9	73.00	50.00

8mm PROJECTORS

DeJur P500, CC	61.00	30.00
DeJur Eldorado, CC	84.00	50.00
Revere P777, CC	84.00	45.00
Revere P85D, CC	84.00	45.00
Revere P90, CC	109.00	65.00
Kodak Brownie 300	47.00	20.00
Kodak Brownie 500	59.00	30.00
Kodak Showtime 500	93.00	50.00
B&H 253A	39.00 U	25.00
B&H 253RX	49.00 U	35.00
B&H 253RY	64.00 U	45.00
B&H 122LRY	108.00 U	70.00
Keystone K75	39.00 U	25.00
Keystone K100	32.00 U	40.00
Keystone K109D	89.00 U	55.00

16mm CAMERAS

Revere C101 Roll, F2.5	129.00	65.00
Revere C105 Tur. Roll, F1.9	163.00	95.00
Kodak K100, F1.9	224.00	120.00
Kodak K100 Turret, F1.9	259.00	160.00
Cine Kodak Special, F1.9	1095.00	400.00
Keystone A9, F2.5	48.00 U	35.00
Keystone A 12, F1.9	89.00 U	70.00
B&H 70DR, F1.9	249.00 U	185.00
B&H 240TA, F1.9	158.00 U	120.00
B&H 200EE, F1.9	184.00 U	145.00
B&H 240EE, F1.9	208.00 U	160.00

16mm PROJECTORS

Revere P48, Case	126.00	60.00
B&H Statesman, Case	96.00 U	75.00
B&H Diplomat, Case	144.00 U	110.00
B&H 302E Sound	495.00 U	375.00
Revere Sound SP16	234.00	140.00
Kodak Sound Pageant	369.00	170.00
Ampro Stylist Sound	305.00	150.00
Keystone K161	89.00 U	60.00

SLIDE PROJECTORS

Argus 300 Standard	29.50	10.00
Argus 300 Auto CC	44.50	20.00
Argus 300 Remote, CC	62.00	30.00
2¼ Sq. Brumberger	44.00	20.00
Kodak 300, Case	47.00	25.00
Kodak 300 Auto, Case	56.00	28.00
Kodak Signet 500	59.00	30.00
Kodak Signet 500 Auto	69.00	35.00
Graflex Constellation	37.00 U	26.00
Graflex Constellation Auto	59.00 U	45.00
Realist 620	29.50	15.00
Viewlex Projectomatic	54.00	30.00
Viewlex Powermatic 500	84.00	45.00
Revere 553, Case	59.00	25.00
Revere 555, Case	64.00	28.00
Revere 888D, Case	109.00	60.00
B&H Robomatic, Case	85.00	70.00
B&H TDC 706S, Case	39.00 U	28.00
TDC 706M	29.00 U	20.00
TDC 300 Duo	32.00 U	20.00
TDC 500 Duo	51.00 U	35.00

2¼ SQUARE REFLEX

Yashica A	22.95	10.00
Yashica C	34.95	15.00
Yashica LM	45.95	25.00
Yashicamat	55.50	30.00
Kalloflex	89.00	45.00
Ricoh Diacord G	35.00	15.00
Ricoh Diacord L	49.95	28.00
Kalimar Reflex	74.50	40.00
Super Ricohflex	19.00	10.00
Minolta Autocord	48.00 U	35.00
Minolta Autocord L	67.00 U	45.00
Rolleicord, F3.5	29.00 U	20.00
Rolleicord V, F3.5	57.00 U	40.00
Auto Rollei, F3.5 Tessar	59.00 U	40.00
Auto Rollei, F3.5 Xenar MX	89.00 U	60.00
Auto Rollei, F3.5 Tessar MX	99.00 U	65.00
Auto Rollei, F3.5 Xenar LVS	119.00 U	90.00
Auto Rollei, F3.5G Meter	159.00 U	120.00
Auto Rollei, F2.8E Meter	195.00 U	155.00

EXPOSURE METERS

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Editorial

May Time Is Picture Time

Spring bursts into full bloom in the nation's photo stores this month with posters, banners, and bunting proclaiming *May Time is Picture Time.* This is the theme of a nation-wide promotion, directed by the Master Photo Dealers' and Finishers' Association and backed by the entire photographic industry, designed to stimulate mass interest in photography. For the seasoned photographer it will throw a bright spotlight on all the wonderful new products introduced at the big Chicago MPDFA trade show in March (see page 12 for a complete report). All these new products will be on the shelves of your local dealer to remind you that now is the time to upgrade or add to your equipment in preparation for a more exciting and satisfying summer.

Thus the month of May ushers in what amounts to a nation-wide store-by-store festival and photo show for the millions who were unable to attend the big product shows in Chicago and New York earlier in the year.

POPULAR PHOTOGRAPHY salutes *May Time is Picture Time,* which it regards as an especially fitting opener to a long summer of photographic fun and fulfillment, and dedicates this entire issue to the summertime photographer.

Everything needful for the vacation traveler or stay-at-home has been crammed into this hefty issue loaded with tips and ideas, which, if followed, are bound to make your summer a season of photographic fun and accomplishment. Herein is a blueprint and guide to successful outdoor picture-taking, ranging from opportunities in one's own backyard to such travel advice as how to say "May I take your picture?" in nine languages. Tuck it in your suitcase if you travel, keep it handy if you stay at home.

The know-how in this issue combined with a visit to your dealer during the *May Time is Picture Time* festival for a check-up and possibly upgrading of your equipment, could result in the best summer you ever had.—►

Next month

POPULAR PHOTOGRAPHY

PHOTOGRAPHY IN THE SPACE AGE

•

How to copy your favorite Polaroid print in 60 seconds

•

ARE WOMEN ALLERGIC TO PHOTOGRAPHY?

•

A dozen short-cuts to save shooting and processing time

•

YOU ASKED US—

answers to photo questions you've asked us most

•

THE ABC'S OF OUTDOOR EXPOSURE

+

Exciting New Contest (see page 153)

finder

News and comment by the editors

A summer issue with something for everybody

THIS is the beginning of the season when photography is at its most active, and we're marking it with an uncommonly jam-packed magazine—the one you're holding right now. The feature portion is crowded with helpful and fascinating articles to improve your summertime shooting, and to keep you well supplied with fresh ideas from now until autumn. In fact, we gave these stories such a workshop flavor that we felt justified in omitting the popular Amateur's Workshop section (for this issue only; it will be back in business next month). In addition, three bonuses. One: eight pages of color, on alternating pages in the Summer Picture Section. Two: full and authoritative coverage of the Chicago trade show of the Master Photo Dealers' and Finishers' Association, at which scores of important new cameras, accessories, and processes were introduced. Three: the 16-page supplement, Photo Vacation Handbook, which brings together a remarkable assortment of facts, figures, tips, and straight talk that can guarantee the best vacation pictures you've ever made. Be sure to pack this magazine along with your camera!

BEAUTIFUL SAM
Editor's find on a Florida beach.

Cover girl named Sam

The pretty girl next to the word "TIME" on this month's cover has the odd name (for her sex) of Sam Campbell. Her picture was taken by editor Bruce Downes, who discovered her while he was on a brief vacation at the Yankee Clipper Hotel in Fort Lauderdale, Fla., last December. Mrs. Campbell is the mother of two children and wife of the head of the science department of the Fort Lauderdale High School. She recently won the title of "Mrs. Ft. Lauderdale," and is hostess for this year's Mrs. America pageant in that city. Bruce made the shot on Kodachrome with his Nikon camera as Mrs. Campbell shivered. It was one of those days when the northern winter had slipped a little too far south for comfort. Technical data on the picture appears elsewhere in this column.

Where credit is due

For reasons of layout, we omitted credit lines on the six pictures on the spread headed *Where Are You Going This Summer*. Here are the photographers' names and cities. Lighthouse: David R. White, Oconomowoc, Wis. Mountains: Frederick G. Barton, Denver, Colo. Gondola: Elio Ciol, Casarsa, Italy. Bridge: Wellington Lee, New York City. Goats: Ralph R. Viggers, La Jolla, Calif. Cat: Richard DeMonte, Detroit, Mich.

Cover technical data

There wasn't room in the "cover box" on the table-of-contents page to include the usual technical data; here it is. **Sam Wetmore's** shot of a sandlot baseball game was made with a Leica and 50-mm Elmar f/3.5 lens, on Kodachrome, at 1/100 second, f/6.3. **Salvatore Valastro's** red barn was photographed in Vermont with a Contax II and 50-mm Sonnar f/2 lens, on Type A Kodachrome, for which he used the necessary conversion filter. Exposure was 1/50 second at f/5.6. The four little girls were wading in the surf at Waikiki Beach in Hawaii when **Edward Raczkowski** took their picture with a Baldaxette, which makes half-frame shots on 127 film and has an 80-mm Tessar f/2.8 lens. His film was Ektachrome, and exposure 1/100 second at f/6.3. POP PHOTO Editor **Bruce Downes** made the two shots of pretty Sam Campbell at Ft. Lauderdale, Fla., with a Nikon and 50-mm Nikkor f/1.5 lens; exposure 1/200 second at f/11, on Kodachrome. (See note on Sam at left.) **Valastro** also made the close-up of daisies and marigolds, using the same Contax and Type-A-plus-conversion combination; exposure this time was 1/100 second at f/5.6. The angle shot of the girl in a swing, by **Arthur T. Grahn**, was made with a 4x5 Speed Graphic which has a 135-mm Optar f/4.7 lens; film was Super Panchro-Press Type B, and exposure 1/1000 second at f/8. The charming child under the umbrella was photographed by **Marlis Welsh** of Charlotte, N. C., with a Leica IIIf and 73-mm Hektor f/1.9 lens. Her exposure was 1/60 second at f/4.5, on Kodachrome. The harbor scene was made by **Jules Alexander** on Martha's Vineyard, Mass. He used an 8x10 Ansco View camera with 12-inch Ektar f/6.3 lens. Under early morning sun, his exposure was 1 second at f/16, on Ektachrome film.—

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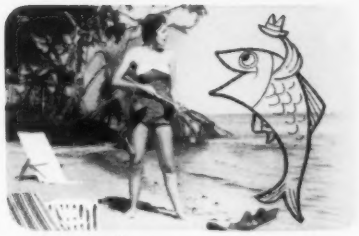
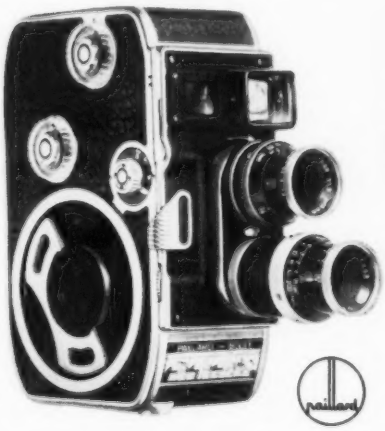


Animation
with single frame settings



Background fade-outs
with open lens,
partly closed variable shutter

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with continuous run lock

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WHERE ARE YOU GOING

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MOUNTAINS

Breathe the rare, invigorating air of high altitude, and turn your lens on nature in its bare, rugged magnificence.

ABROAD

In the foreign places you visit, let your camera see not only external beauty, but something of the life, work, and passion of the people.

WHEREVER YOU GO, THE NEXT 50 PAGES

POPULAR
PHOTOGRAPHY
JUNE, 1958

THIS SUMMER?

CITY

On your urban vacation you seek stimulus; your camera will see past the jagged teeth of the city's skyline, into the vast complex of its commerce and its society.

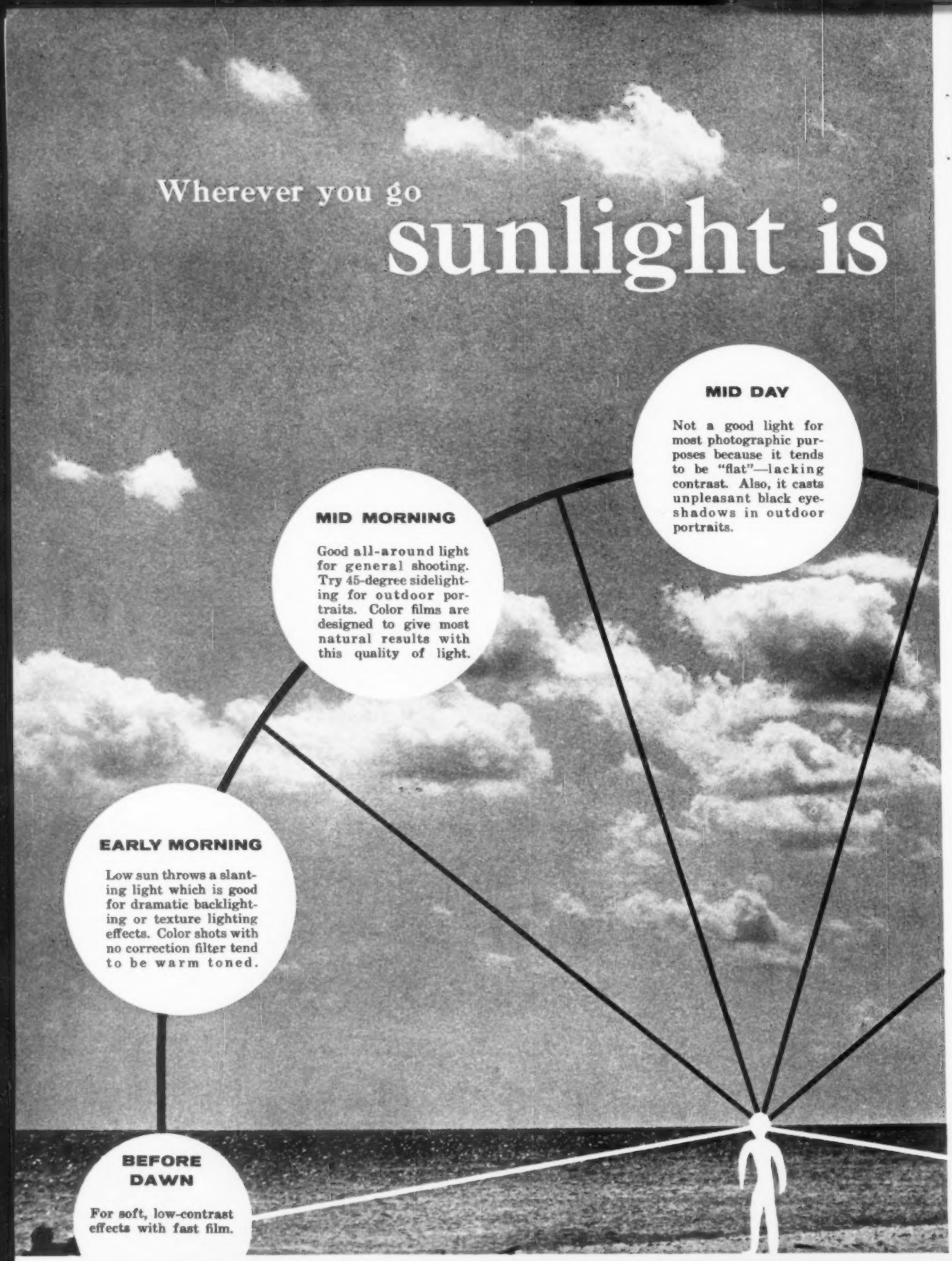
COUNTRY

Good earth and pure air welcome the visitor to farm or ranch; let your lens probe man's relationship with nature, here at its most intimate.

...OR ARE YOU STAYING HOME?

A familiar place seems fresh and inviting when you go to it not for a night's sleep or a weekend breather, but for a vacation. Your camera can feel this freshness.

WILL HELP YOU GET BETTER PICTURES


Wherever you go
sunlight is
MID DAY
Not a good light for most photographic purposes because it tends to be "flat"—lacking contrast. Also, it casts unpleasant black eyeshadows in outdoor portraits.
MID MORNING
Good all-around light for general shooting. Try 45-degree sidelighting for outdoor portraits. Color films are designed to give most natural results with this quality of light.
EARLY MORNING
Low sun throws a slanting light which is good for dramatic backlighting or texture lighting effects. Color shots with no correction filter tend to be warm toned.
BEFORE DAWN
For soft, low-contrast effects with fast film.

the key

WITH the fair skies and long daylight hours of summer ahead of you, it's time to review a few basic facts about sunlight and how to use it more effectively for better pictures in color and black-and-white. The sun, ultimate source of all energy for this planet, also is the creator of all conceivable lighting effects for outdoor photographers. Although we cannot command the sun to stand still or rearrange its position in the sky as if it were a giant studio floodlight, we can exercise a considerable degree of control over outdoor lighting. One important method of control is, simply enough, to choose the time of day at which we shoot. The accompanying chart divides the day into seven segments, from pre-dawn through high noon to twilight, and suggests some of the uses —and points out the pitfalls—of each time of day. Sometimes, of course, you will have no choice but must shoot regardless of the light or miss a good picture. However, when you can wait, a degree of patience may make the difference between just another snapshot and a picture to treasure. Once the time of day has been selected, a second factor becomes important—the relationship between the sun, the camera, and the subject. How to control this for different effects is demonstrated on the following two pages.

EARLY AFTERNOON

As sun drops below zenith, picture-taking conditions improve again, the shadows grow longer, texture and modeling can be emphasized by side- or backlighting.

LATE AFTERNOON

As in early morning, the slanting rays of late afternoon reveal contours of land and sea, texture of buildings. At sundown, colors are very warm.

TWILIGHT

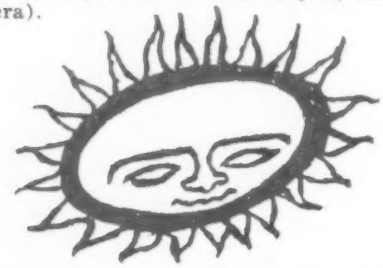
Gives soft, delicate, blue-toned effects.

MAKE USE OF THESE

Pal-Nils Nilsson

BACKLIGHTING

As a rule, long shots of landscapes, seascapes, mountains, etc., will have more impact if you shoot late (or early) in the day and use backlighting—sun behind subject (see photo-diagram below for position of sun, subject, camera).



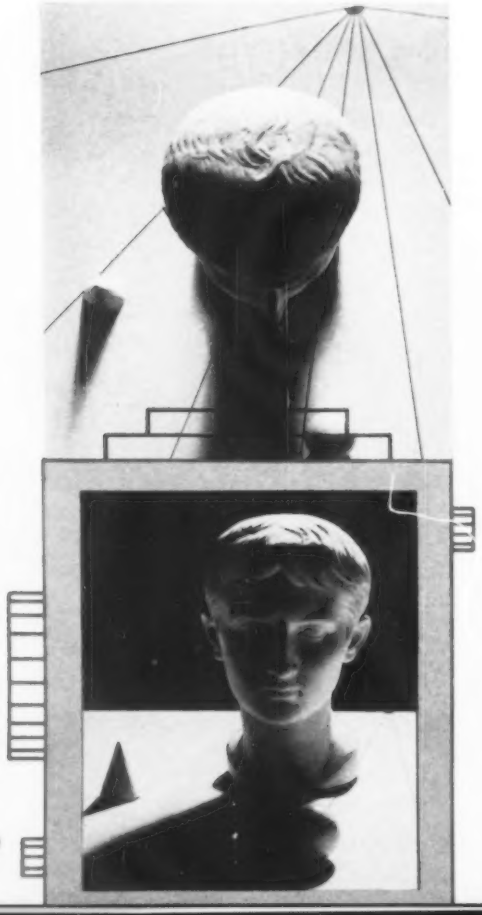
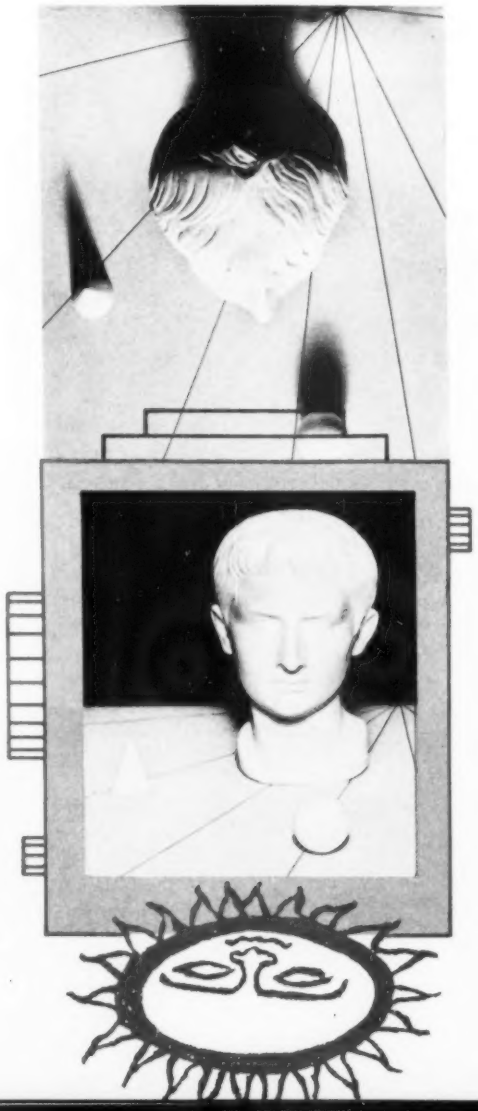


Photo-diagrams by HARVEY SHAMAN

Harry Callahan

FRONTLIGHTING

When the sun is over your shoulder, all shadows are cast away from the camera. The result is even, relatively shadowless — and uninteresting — lighting. Beware shadows under eyes when sun is high.



FOUR BASIC KINDS OF OUTDOOR LIGHT

Dan Young

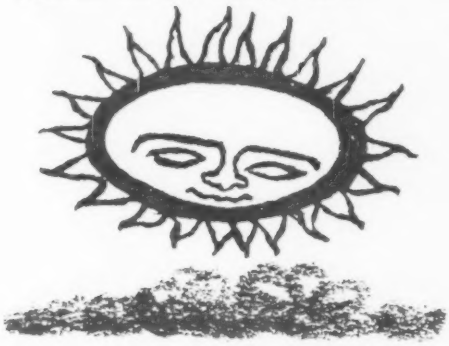
SIDELIGHTING

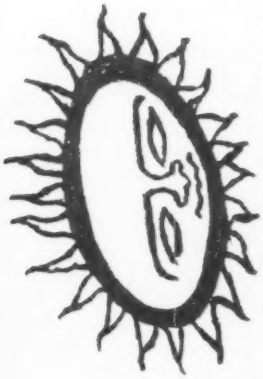
To emphasize shape or texture and lend a feeling of solidity to your picture stand so the sun's rays fall on your subject from the side. For adequate shadow detail with color film, increase exposure about a stop more than for even, over-all frontlighting.

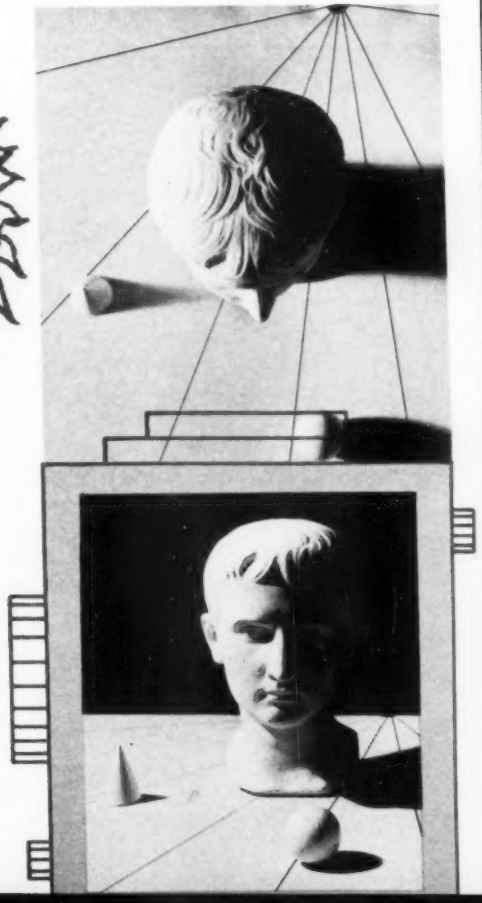
E. B. Henderson

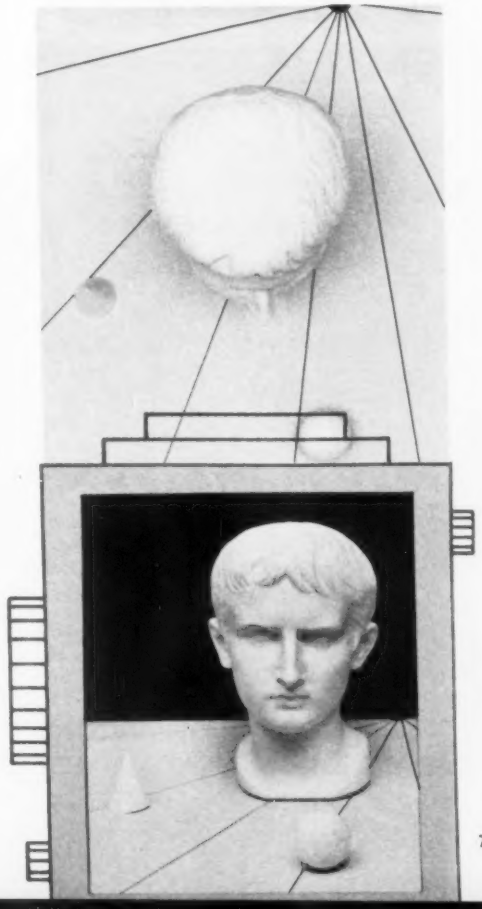
DIFFUSE LIGHTING

On overcast days, in the shade, or just before dawn or after sunset, outdoor illumination is soft, diffuse, and low in contrast. In general this is a superior light for close-ups and portraits.









IN BAD WEATHER

Although a run of bad weather—rain, mist, fog, thunder storms, or glowering gray skies—can throw vacation plans awry, it actually provides a photographer with the chance to take his most interesting summer pictures. For example, Hal Berg recorded this delicately-toned scene at Monhegan Island on a fog-shrouded day. He used 35-mm, and exposed Plus-X film for 1/25 second at *f*/5.6. With today's choice of fast films, adequate exposure in bad weather is no problem even with a simple camera. Try color, too, capturing the soft pastels and muted monochromatic effects which are even more beautiful, sometimes, than the raw colors of bright sunlight. Use an exposure meter; bad-weather lighting can be deceptive. To protect your lens from rain, mist, or wind-driven spray try a neutral-density filter.

EXTEND YOUR

AFTER DARK

Night pictures are dramatic and fascinating, too, and summer offers plenty of opportunity for good ones. Basically, there are two techniques for shooting pictures after dark. One is to place your camera on a tripod or other firm support and make a time exposure, being extremely careful not to jiggle the camera while the shutter is open. Karl Linggi's view of fireworks exploding over a castle was made in this way. He opened the lens of his twin-lens camera to *f*/3.5 and exposed Tri-X for 20 seconds—long enough for one display to burst. The second technique for night photography is to use a fast film, slow shutter, and wide lens aperture for a snapshot by whatever light is available. An example of this is E. B. Henderson's intimate glimpse of a couple at a summer jazz festival, far right. Henderson's camera was a 35-mm, and he exposed Tri-X for 1/25 second at *f*/1.4 because of extremely poor light.

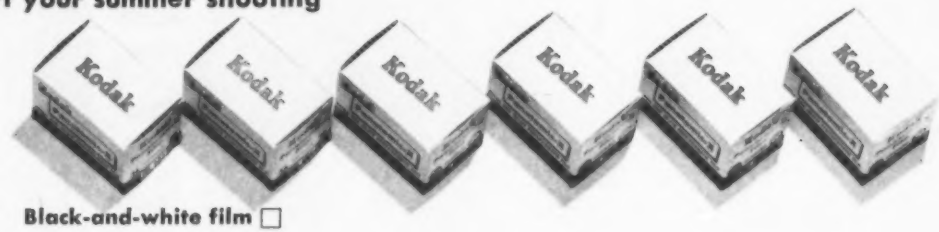
SHOOTING HOURS

WHAT TO TAKE

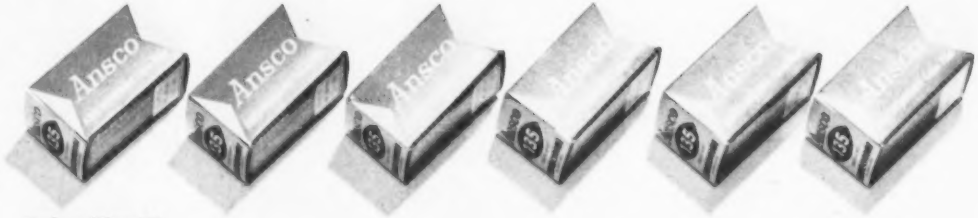
Here's a visual check list showing the most important accessories that should go into your gadget bag before you start your summer shooting

Sometimes the difference between a successful photographic trip and an unsuccessful one lies in the fact that a photographer did not take the time to put a few inexpensive accessories into his camera bag. On these pages you will find a visual list aimed at reminding you about some of the most important items you can take with you whether you're going to do some shooting down the street or across the ocean in Europe. Check off the accessories you already have and put circles in the boxes near those items you need. If you should decide to take all the accessories shown, you will be well prepared for almost any shooting situation — close-up work, night, bad weather, haze, long time exposures, and so on. Although some of the items may look unnecessary now, think twice before you cross one off.

BASIC ITEMS



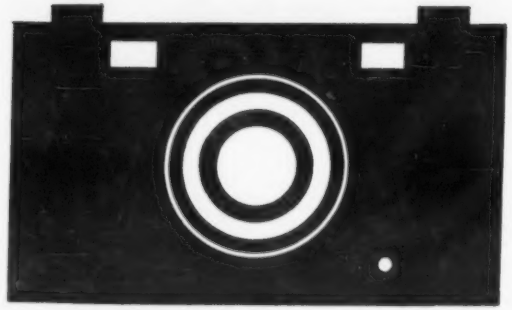
Black-and-white film ☐



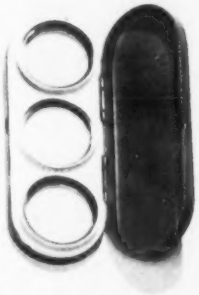
Color film ☐

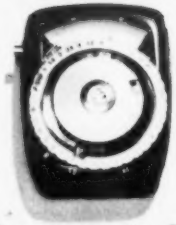
Filters: skylight ☐
conversion ☐
medium yellow ☐

Lens shade ☐



Camera ☐





Exposure meter ☐

Cable release ☐

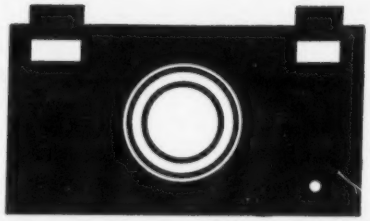
Equipment courtesy Grand Central Camera

FOR MORE VERSATILITY

Folding tripod ☐

Flashbulbs ☐

B-C flash gun ☐



2nd camera ☐

Extra battery ☐

Close-up lens ☐

Extension flash ☐

Penlight ☐

Tape measure ☐

Telephoto lens ☐

Extension flash cord (2 male plugs) ☐

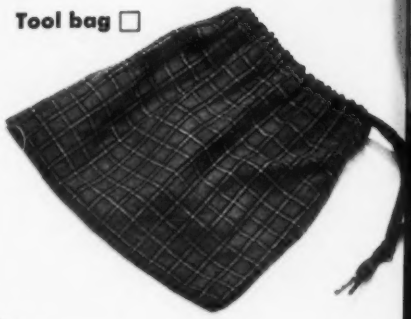
Wide-angle lens ☐

Lens tissue ☐

Lens brush ☐

Light-green filter ☐

TOOL KIT



Tool bag ☐

Pocket knife ☐

Pliers ☐

Screw driver ☐

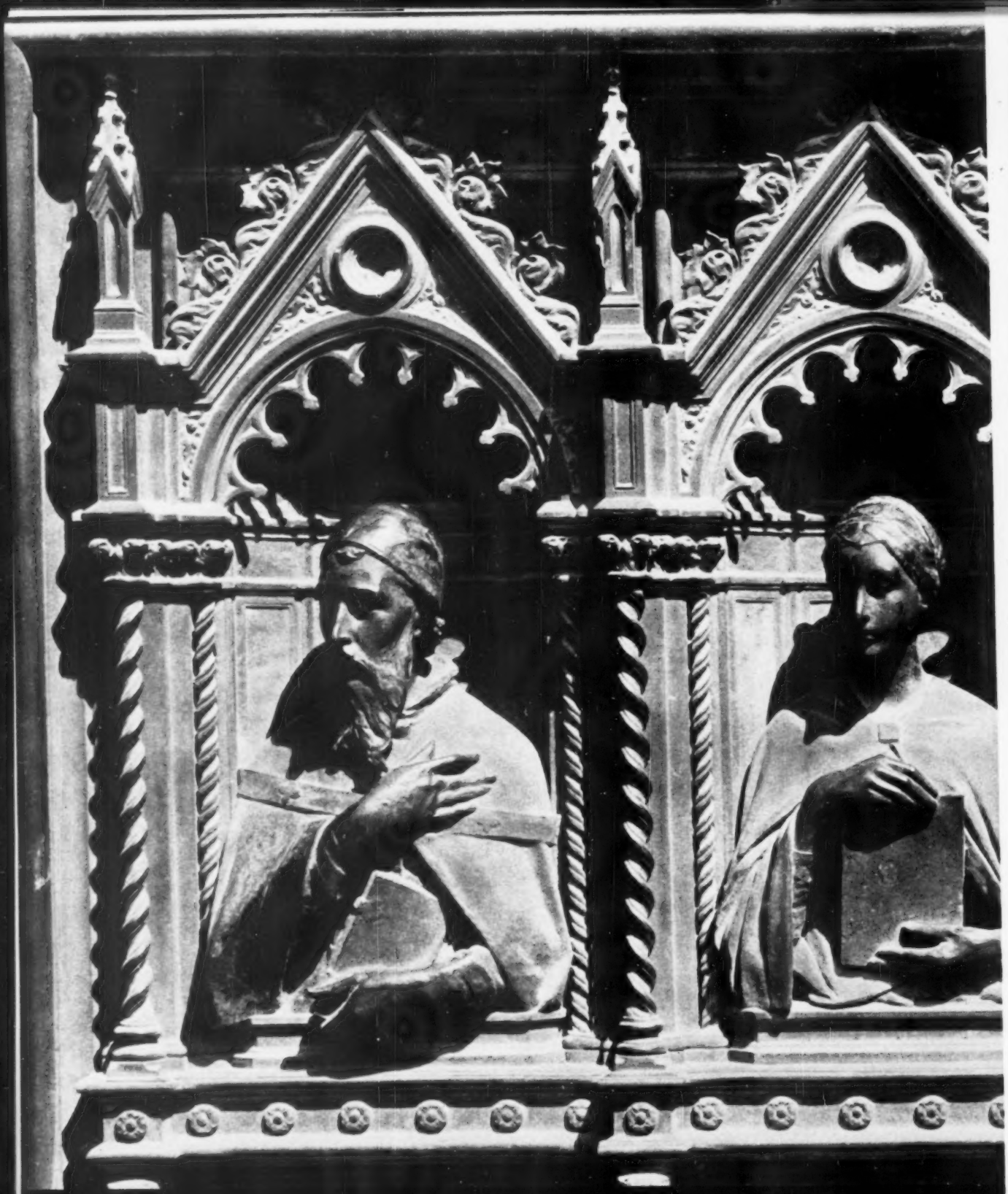
Extra-small screw driver ☐

Adhesive tape ☐

Scotch tape ☐

Pad and pencil ☐

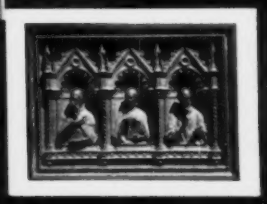
photographs by Herb Giles



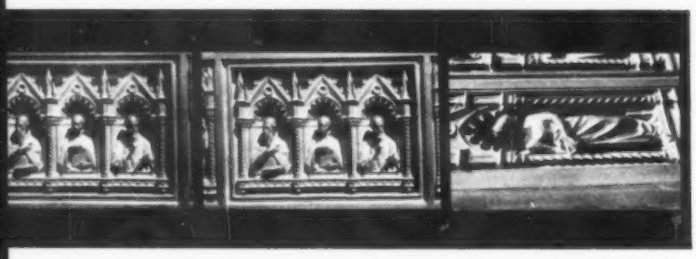
BIG-CAMERA QUALITY

Photograph by GEORGE CSERNA

Accurate exposure with thin-emulsion film and careful developing in compensating developer can produce amazingly high-quality results like this detail of a cathedral door in Florence, enlarged from 35-mm. Contact print is reproduced below.



FROM 35-MM



GEORGE CSERNA's photograph of a cathedral door, reproduced on the preceding spread, provides ample proof, should proof be needed, that the 35-mm camera can produce the kind of print quality traditionally associated with large-format cameras. Thus the summer vacationing photographer can both have his cake and eat it: he can enjoy the convenience and portability of miniature equipment and also achieve the high quality needed for scenes and architectural shots. Abso-

FOLLOW THESE 12 TIPS FOR MAXIMUM

1 Choice of film

Film speed and image quality are mutually antagonistic—the faster the film, the poorer the image. Aside from finer grain, the slower films offer higher resolution (the ability to record fine detail) and acutance (the edge contrast of image contours). Always pick a film that's as fast as you need, but no faster. Thin-emulsion films (see above) are recommended.

2 Filling the frame

The most serious cause of poor photographic quality is high enlargement ratios. By composing so as to use as much as possible of our 24x36-mm negative frame we can avoid the unusually high magnifications required to blow up a small portion. This pays off in sharper, finer grained enlargements. Therefore, move as close to the subject as necessary in order to fill the frame edge-to-edge.

5 Focusing for maximum sharpness

More of our usable depth of field lies *behind* the point of focus than falls in front of it. Therefore, when maximum depth is required (particularly when using wider openings) it's advisable to focus the camera at a point about $1/3$ of the distance between the nearest and farthest object that must be recorded sharply, rather than at the mid-point.

6 Lighting

Light makes pictures, and the quality of this light greatly influences photographic quality. Strong sidelight emphasizes subject contrast, reveals texture, gives greatest illusion of sharpness. Diffuse, nondirectional illumination reduces contrast, subdues detail and texture, makes it more difficult to obtain critical image sharpness. Therefore, to increase apparent sharpness use side lighting on a bright day.

9 Choice of a developer

Some developers are sharper than others. Many fine-grain formulas contain substances which dissolve away metallic silver deposited by the developer. By thus removing a part of the image such formulas produce reduced sharpness. *With thin-emulsion films it is most important to use a nonfine-grain, nonsolvent compensating developer especially designed for them, such as FRX-22, Neofin, or Edwal Concentrate No. 2.*

10 Development

Over- and underdevelopment are injurious to grain and sharpness: overdevelopment because it develops crystals exposed solely by internal light-scattering and produces excessive clumping; underdevelopment because it fails to develop a certain amount of vital image-forming silver. Follow manufacturer's time-and-temperature recommendations carefully, or—better yet—develop by inspection.

lutely no special technique is required; only careful attention to details. Cserna works with an M-3 Leica (usually with the standard 50-mm *f*/2 dual-range Summicron lens) but any good-quality miniature camera and lens can yield excellent results if the 12 pointers below are followed. Shooting under bright, sunny skies, Cserna generally chooses a thin-emulsion film (Kodak Panatomic-X), re-rated at an exposure index of 50, twice its nominal ASA 25 index, and developed for 11 minutes in FR X-22. (X-22 is a nonfine-grain compensating developer designed to give sharpest possible results with thin-emulsion films.) Kodak, Ilford, Agfa, Perutz, and Gevaert all manufacture thin-emulsion materials. (For details, see *How to Choose the Right Film*, in the February, 1958 issue of POPULAR PHOTOGRAPHY.) When lighting conditions require a faster film, Cserna's first choice is Ilford FP-3 rated at 160 for 4-5 minute development in UFG.—*Bob Schwalberg*

QUALITY FROM MINIATURE NEGATIVES

3 Shutter speed

Two notorious picture-spoilers are subject and camera motion. Aside from holding steady during exposure (perhaps using a tripod) your best insurance is a sufficiently high shutter speed. Opinions vary as to the slowest speeds that are hand-holdable without camera motion, but for quality results without a tripod better stick to 1/50 second or faster.

4 Optimum lens apertures

Contrary to widespread misbelief, the smallest lens apertures do not give the most sharpness, and with most short-focal-length lenses stops like *f*/11, *f*/16, and *f*/22 aren't as good as *f*/4, *f*/5.6, or *f*/8, despite reduced depth of field at these apertures. *Optimum apertures are usually those between the third and fourth engraved stops.*

7 Exposure

Overexposure results in light-scatter *(irradiation)* within the emulsion, increased grain, reduced contrast, undermined sharpness. Underexposure causes a loss of detail in the shadows, and this again means loss of sharpness. For finest grain and maximum sharpness use light meter and aim at *the minimum exposure required to record necessary shadow detail.*

8 Choosing an effective exposure index

For consistently correct minimum exposures set your exposure-meter speed dial at a rating *higher* than the recommended ASA index. Here's a brief rule of thumb: Double the ratings of thin-emulsion films; multiply the ASA ratings of other films by an average factor of 2.5. Grain, gradation, and sharpness will be much improved. *Give normal development.*

11 Focusing on the grain

Many photographers reduce the potential of their equipment and materials to the box-camera level simply by neglecting to focus the enlarger *on the grain.* If the grain isn't visible (no matter how fine it may be) the print is just not sharp. Inexpensive magnifiers are available to help obtain critical on-the-grain focusing.

12 Care in using filters

When you put a filter over your lens it becomes a part of the camera's optical system. A cheap, poorly made filter can hamstring the finest lens, so buy quality filters only. Mount filters as close as possible to the lens, and avoid excessive tightening which can cause distortion. Given a choice of two filters, always pick the thinner one.

SHOOTING

Your camera can catch the action and thrills

of the games and activities you'll be

taking part in and watching

Summer sports can supply you with thrills, exercise, and subject matter for your camera. Wherever you go you will more than likely run into one or more of the games and activities listed in this story. Some can be shot from the grandstands, others can be photographed from the inside—while you're participating in them.

The purpose of this story is *first* to impress upon you the great variety of sports that will be around this summer, *second* to offer some brief advice on the type of lenses and film that should be used, and *finally* to acquaint you with some of the more important do's and don'ts of each sport.

But no matter what sport you're shooting, the following three elements are the keys to good pictures: (1) a well-thought-out point of view; (2) a decisive moment of action; and (3) the proper camera technique (choosing right film, shutter speed, lens, and correct framing).

Because so many cameras are equipped with rapid advance mechanisms of one kind or another, the photographer should not overlook the possibility of making picture sequences.

Remember, you can take action home with you!

SUMMER SPORTS

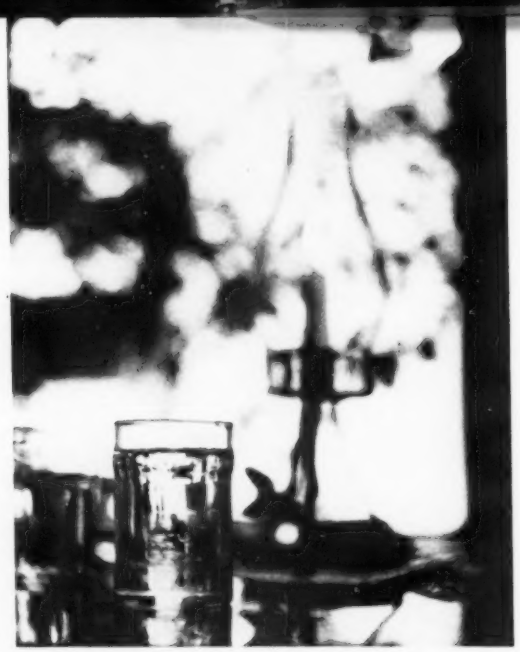
By E. PETER SCHROEDER
Photographs by the author

DO'S AND DON'TS IN SUMMER SPORTS PHOTOGRAPHS

SPORTS	LENSES	SHUTTER SPEEDS	FILM SPEEDS	FILTERS	DO'S	DON'TS
ANGLING	Normal Wide-Angle	1/100-1/200	Med.	Polarizing	Use of polarizing filter will cut down excessive glare on water. A good picture can be obtained by wading into water and shooting from hooked-fish point of view. A plastic bag can be used over camera—not over lens—to keep it dry.	Don't forget to have your camera on a strap around your neck always. If you are going to do extensive fishing photography don't forget to have your camera insured.
ARCHERY	Normal Wide-Angle	1/50-1/200	Med.	Yellow Green Haze	Shoot at a 45- or 90-degree angle from front of archer; low angle will add dramatic emphasis. A camera on a tripod near the target with a long cable release will allow you to catch an arrow as it is about to hit target. Filters can be used to darken sky for better definition.	Don't shoot only one picture of an archer close up; take two or three, varying your position.
BADMINTON	Normal Wide-Angle	1/500-1/1000	High		Best position to photograph is at end of net where action can be photographed on either side of it.	Don't use slow speeds such as 1/50 or 1/100; if possible always shoot over 1/200 or higher. This game is extremely fast and high shutter speeds are required to stop movement.
BASEBALL	Normal Tele.	1/200-1/500	Med. High		In daylight games normally use medium-speed film and in night games (and late afternoon when most of field is in shadow) high-speed film is best. Prefocus on area where action is liable to take place. Always get two players in picture for impact emphasis. Warm-up pictures allow you to get photographs of players in action close up as well as portraits.	Don't forget to use tungsten and not daylight color film under stadium lights.
BICYCLING	Normal Wide-Angle Tele.	1/200-1/500	Med. High	Yellow Haze	A low-angle shot of cyclers silhouetted against the sky will offer effective emphasis. In a bicycle race, e.g., Tour de France, etc., good pictures can be obtained at the start where cyclists are bunched together. Also photographing from a high point down as the cyclists string out along the road will offer an interesting picture.	Don't photograph just one cycler; two or more will always offer a more interesting picture.
BOXING	Normal Wide-Angle Tele.	1/50-1/300	High		Boxing matches will normally take place at night in a well-lighted ring. Either try to get close-ups at ringside, or if you must shoot at a distance, do so at a height (bleachers) to get above distracting boxing ropes. Most always the action is more intense at the end of the round. Speeds at ringside, 1/100 to 1/300, in bleachers 1/50 to 1/100 sec (in black-and-white).	Don't forget to use a sports finder in following the action.
BULLFIGHTING	Normal Tele.	1/200-1/500	Med. High		You can tell a story of the fight since it is made up of separate phases. For dramatic effect use slow speed (1/25 or less) to obtain blur of bull charging matador.	Because the light level goes down fast when the arena is in shadow don't forget to change to a faster film.
CANOEING	Normal Wide-Angle Tele.	1/200-1/500	Med.	Yellow	Use a wide-angle lens when photographing in canoe; normal and telephoto lenses are best used from shore.	Don't place your camera in the bottom of a canoe.
CRICKET	Normal Tele.	1/200-1/500	Med.		Shoot from high angle since players dressed in white will stand out against a dark (grass) background. Good action shots occur when wicket is broken, batsman is in action, bowler is in action and fielder is making catch.	Don't overexpose and lose detail in white uniforms of players. It is better to underdevelop slightly than to overdevelop.
FIELD-HOCKEY	Normal Tele.	1/200-1/500	Med.		Best pictures are obtained in front of goal (striking zone) because it is here that the ball is hit; good place to shoot is behind and at the side of net-goal.	Don't run here and there trying to get better pictures of the game. Study both teams; learn which side keeps the ball down near the opponent's goal most often; then stay at that end of the field shooting sideline pictures and then goal shots.
GOLF	Normal Wide-Angle Tele.	1/100-1/500	Med. High		Low-angle shots are dramatic. Shoot in sand trap as golfer hits ball to get explosion of sand and ball. Be aware of expression and movement of golfer as he watches ball head towards cup.	Don't move around when golfers are driving or putting; movement can distract and harm their concentration.
GYMNASTICS	Normal Wide-Angle Tele.	1/100-1/500	Med.	Yellow	Take pictures from high viewpoint if possible to obtain a dark background since gymnasts wear white uniforms. Where there is a large group exercising shoot at a distance to get pattern of movement and positions of participants. Try low angle for silhouette; filter to darken sky. Get close-ups during warm-ups, this will give you an opportunity to get graceful glamor shots of girls.	As in tennis, where performers also wear white, do not overexpose when taking close-ups; better to underexpose slightly.
HIKING, MT. CLIMBING	Normal Wide-Angle	1/100-1/200	Med.	Yellow Haze	Have camera ready for immediate shooting by carrying it around your neck. In mountain climbing it is a good idea to strap camera to body by having a belt over neck strap just above camera. This will prevent it from banging into rock as you climb but still provide easy accessibility. Preset focus for quick shots. With wide-angle lens use depth-of-field scale. Haze or ultraviolet filter should be used to cut down ultraviolet rays encountered at about 5,000 ft.	Don't carry a lot of camera equipment to impede you; a camera with normal or wide-angle lens, one type film (black-and-white negatives can be made from color slides), and a light meter, perhaps a filter, and last, a lens hood, are all that are necessary.
HORSESHOES	Normal Wide-Angle	1/100-1/500	Med.	Yellow	Catch horseshoe just as thrower's arm is extended and shoe is about to be let go; shoot from low angle. If player is accurate set up camera on ground behind stake and get shoe just as it is about to land.	See archery don'ts.

continued on page 116

The New York photographer saves up his problems during the year and then makes his vacation-time a period for solving them. What struck him about this subtle, yet dramatic portrait was the way backlighting was reflected only from the flat surfaces, yet told the whole story. Like all the pictures on these pages, he made it on Plus-X film. Exposure was 1/10 second at *f*/1.8 with 35-mm camera and a normal 50-mm lens.



During vacation when he can relax and concentrate, he works out problems like this one in selective focus. He was intrigued here by the different shapes and decided on a simple water glass as his element of sharp focus. Backlighting was the only source of illumination, which Berg used to maximum advantage. After experimenting with the arrangement of the elements, he came up with this off-beat still-life. He shot wide open at *f*/2 and 1/50 second.

The idea of shooting in bad weather intrigued Berg, so he made this shot during a heavy fog, catching the small boat just before it slipped from view. Then he worked on the print for whatever would come up. An unusual, high-key picture was the result, made with a 58-mm lens, 1/25 second at *f*/2, and then printed contrasty.

This extreme close-up, which becomes almost like selective focus, was made while doing a series on bees. Working with a normal lens, his approach insured a complete emphasis on the flower itself and the bee, with everything else in the picture out of focus. Berg feels his best pictures have come from these summer experiments. Taken with 58-mm lens, 1/400 at *f*/5.6.

Basically another of his experiments with backlighting, Hal also noticed the way the wind blew the grass in one direction while the clouds moved in another. This cross-play of elements make an effective composition. With the sun behind the clouds, he exposed for the sky, shooting 1/200 at *f*/11.

During the year, Hal Berg makes a living shooting pictures on assignment. But on vacation, he goes to the Maine coast where he relaxes by solving challenging problems with

SUMMER EXPERIMENTS

A strong silhouette of a dead tree caught the photographer's eye, so he shot 1/100 at *f*/8 to wash out any detail. To make the blacks and whites even stronger, he printed contrasty so that only the bizarre shapes remained. Hal finds these summer experiments give him great enjoyment as well as his top pictures.

Primarily an illustration photographer, Berg liked the way backlighting modeled the girl's beautiful form. The different textures of the rock, summer hat, cloth, and girl's skin also heighten interest, although subordinate to the essential grace of the composition. Exposed 1/100 at *f*/5.6.

ZOO CLOSE-

Good pictures like this racoon shot require patience.

With a little bit of luck, plus a lot of patience, you too can get colorful candids with your long-focus lens of the world's most entertaining and inexpensive models

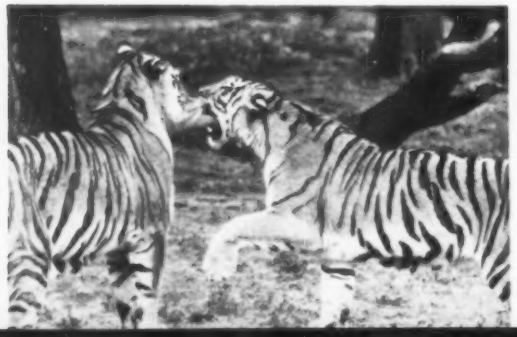
Long-focus lenses give close-ups like this ostrich portrait.

YOU can have the thrills of big game hunting without spending weeks on a safari. Instead of loading up with 30-caliber shells on the veldt, try your 35-mm camera and a long-focus lens at your nearest zoo.

Actually any focal length lens will do for zoo pictures, but a telephoto or long-focus does pull you in closer for impact. Even a 120 reflex camera can give "telephoto" effects if you center your image and then crop to 35-mm size on the negative when printing. Another feature of many long-focus lenses is that at close range they can blur the slender bars or wire mesh of a cage until they literally become invisible. It's possible to focus on an animal 30 feet within an enclosure, shooting through a heavy mesh fence, and get a picture that doesn't show a trace of the wires.

You don't have to contend with fences and bars at some zoos. The pictures on these pages were made at the Bronx and Detroit zoos, both noted for their unusual open exhibits. I used a Praktina with a 240-mm Novoflex Follow-Focus lens. The lens is focused by a spring-activated pistol grip and can (*Continued on page* 160)

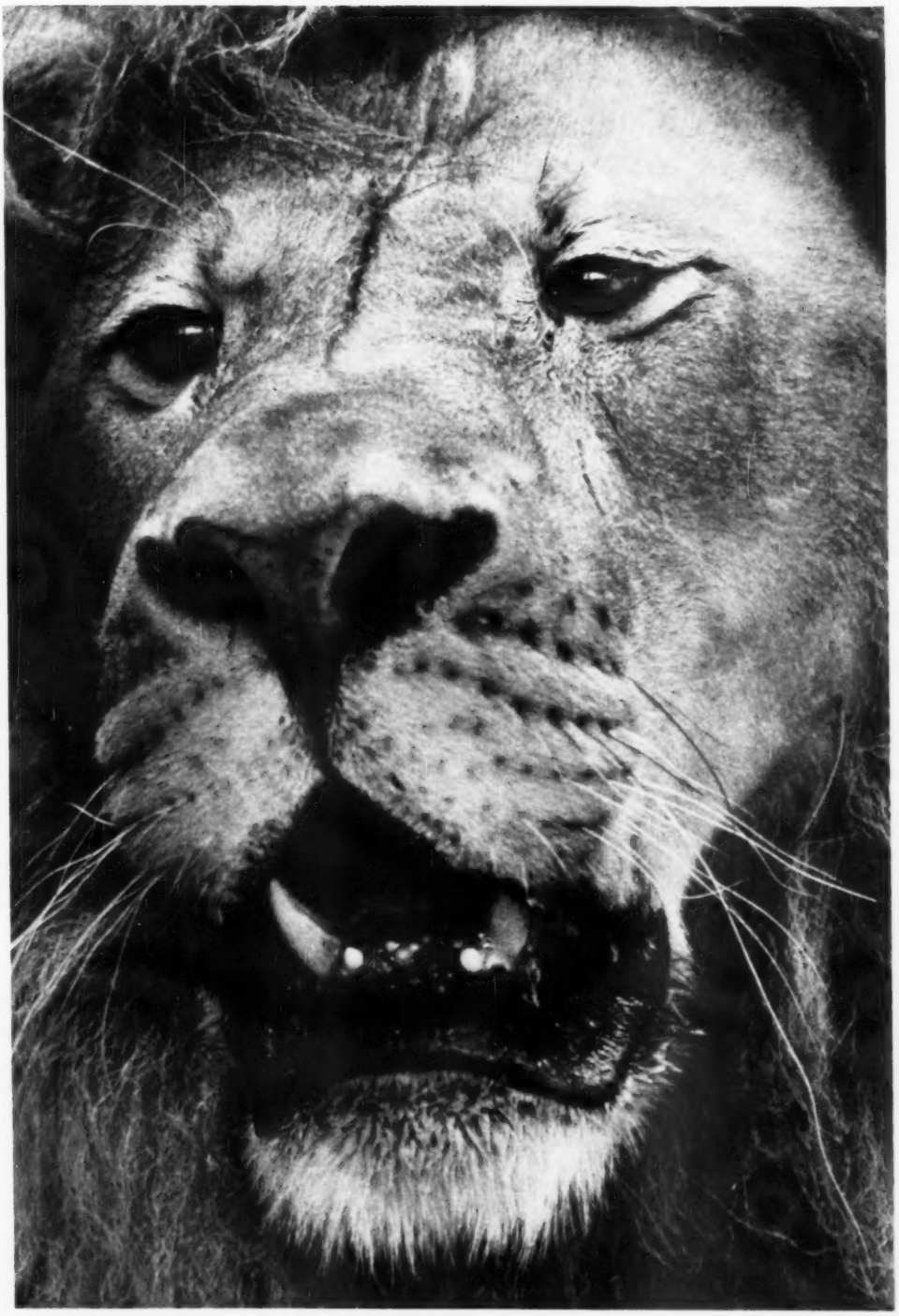
Monkeys always put on good show with unpredictable spurts of action.



Don't forget animals react to each other—be ready when action occurs.

UPS

By CARL PURCELL
Photographs by the author



You don't have to enter the lion's cage to get such a close-up, made with a 240-mm lens on 35-mm camera.

DOs & DON'Ts FOR ZOO PICTURES

DO . . .

USE *a long-focus lens for more picture impact.*

GET *exposure reading from something nearby that has almost same tonality, reflected light as your animal subject.*

OBEY *and cooperate with zoo keepers and attendants.*

PUT *empty film boxes in nearest trash containers.*

DON'T . . .

HESITATE *to use enough film. Try several different angles.*

WORRY *about perfect exposure so that you lose a good picture situation while taking light reading.*

EXCITE *or upset the animals in any way.*

FAIL *to anticipate a good picture situation as it develops.*

WHEN IT'S HOT OUTSIDE...

here's how

Photograph by Hiro Wakabayashi

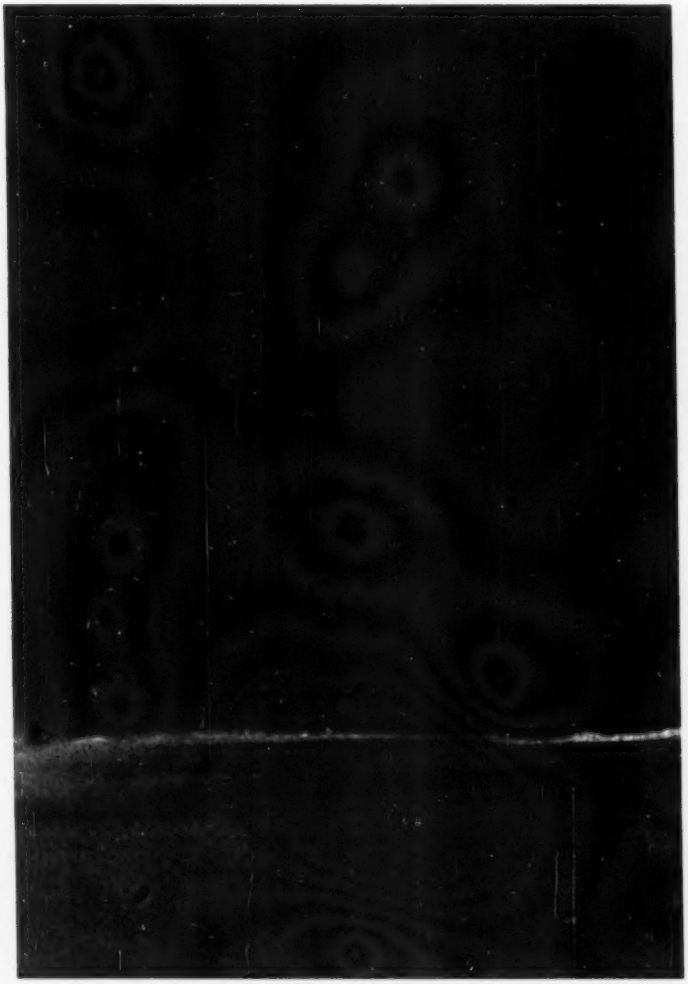
By GEORGE B. WRIGHT

CAMERAS by the thousands seem to come out of hibernation around pussy-willow season. By the time we have forgotten the February cold wave and begin to complain about the heat (and the humidity), film sales are booming.

It is the film itself which has the most reason to complain. Conditions which merely make us uncomfortable are dangerous to film. Like foods, films are a perishable commodity and require reasonable storage conditions before use and proper handling before and during developing when the thermometer climbs.

Remember that the film emulsion is gelatin, a purified and specially treated form of the same by-product of meat packing which you eat in assorted fruit flavors as summer dessert. In recent years,

to get the best results from your materials and equipment



Top picture was printed from film processed in solutions at wash-water temperature of approximately 80 F. Mottled effect in bottom picture is not film grain, but fine reticulation caused by developing at 68 F and then washing at nearly 80 F.

methods of hardening this gelatin have been devised by the film chemists so that now some movie films may be processed at temperatures up to 150 F without melting it, and the double-coated films which we use in our still cameras may, with care, be developed at 95 F or slightly higher.

The gelatin serves as a carrier for halide crystals which are in a state of delicate balance, waiting to be tripped by the extremely small amount of light focused by the lens. There is a long, slow period of change in rated speed, contrast, and fog level, changes which are accelerated by heat and moisture.

We expect the impossible from film manufacturers—and they often deliver it. In fact, they have gone a long way toward making sensitive material "idiot-proof." However, we can get the full value of the characteristics built into films, especially color, if we do not deviate too far from ideal storage and handling conditions.

In part, this is a matter of how critical we are. The scientific photographer handles films with the same attention to temperature, humidity, and packaging that would be devoted to butter and eggs. Most of us handle black-and-white and even color films with a lack of care which is a tribute to our confidence in the manufacturer.

Black-and-white pictures are rarely lost through this carelessness, although there will be a real gain in quality if we keep our films at 70 F or below and protected from humidities of over 50 percent. And if we want to keep them unused for more than a month or two,

ideally they should go into a tape-sealed can or jar in the bottom of the refrigerator. Remember, many homes are kept at 70 F or more even in the winter. The moisture-sealed foil or the little gasketed can in which many 35-mm films are packed should not be opened until the film is loaded into the camera.

Color films are much more unstable and need to be handled with more respect if we expect good color rendition when the weather is hot and moist. Unfortunately, we have no control over their storage conditions before we get them. The small dealer who has a dozen rolls on his shelf for a month or two before you buy one of them usually assumes that they are as inert as the hair lotions on the next shelf.

If you are more critical than this average customer, however, you should try to buy your film where there is a fast turn-over and, if you keep it for a week or more before exposure, seal it in a can or jar and leave it in the refrigerator.

As temperatures rise, the internal structure of the emulsion may change very rapidly, even in black-and-white films. The air inside a car parked with the windows shut in the sun may quickly rise to 140 F or more. The glove compartment can become a small solar oven at over 200 F. Even a camera left lying in direct sunlight and absorbing infrared radiation can generate an internal temperature of 180 F in a short time.

These high temperatures are obviously not recommended for fine instruments either, such as cameras and exposure meters. While the latter have been constructed to be reasonably "idiot-proof," plastic and metals do not expand at equal rates under heat, and the photoelectric cell itself becomes slightly more sensitive as it is warmed. Above about 113 F, the reading error may exceed the ½ stop of allowable error and become great enough to affect color exposures.

If an uncapped lens is left pointing toward the sun it will focus the image of the sun directly on the curtain of a camera with a focal-plane shutter. Such a burning-glass is used by primitive people intentionally and by a surprising number of "civilized" photographers, unintentionally. Cloth shutters will be scorched and weakened or actually burned through; metal shutters will be distorted as well as bake the film in position behind them.

On a trip, your supply of film is best held in an insulated container such as a camp ice-box or a "Scotch cooler" (omitting the ice, of course) and kept from the direct rays of the sun.

In the southern states particularly, moisture in the air becomes a problem. When the relative humidity (included in the official weather reports) is much over 50 percent, it is safest to avoid leaving film in the camera more than 24 hours. It is apt to pick up considerable moisture and perhaps stick or show mottle on development. Be careful, too, not to expose film to the vapors of the anti-mildew preparations used on clothes and leather in these climates. Many of these release formaldehyde vapors which are destructive to film. Moth crystals, too, can harm film.

If there is a good reason for holding film for a long period

SIX PRECAUTIONS FOR HOT-WEATHER PROCESSING

1 Make temperature of all solutions the same as the wash water by using water jacket (print washer, sink, or tray) and let water circulate until all temperatures are equal.

2 At processing temperatures up to 80 F, prevent emulsion damage from too sudden change from developer to stop bath by using a 30-second water rinse between the two.

3 At processing temperatures above 80 F (and when recommended in chart of thermostable developers) omit water rinse and use a hardener-stop bath after the development.

4 Use rapid (ammonium thiosulfate) fixer to keep processing time brief. For rapid fixers without hardening action, you may need to add special hardener in hot weather.

5 Easy way to cut down on washing time is by immersing the film after fixing and a brief rinse, in a hypo eliminator or neutralizer. Then wash film for not more than 5 minutes.

6 Before drying, use wetting agent for no longer than 30 seconds. Longer immersion will increase drying time and swell emulsion, making it more susceptible to damage.

unexposed, seal it in a moisture-proof container and keep it in the refrigerator or even in the home freezer. Color film can be held right up to the expiration date with no appreciable color shift if it is held below 50 F. When it is removed for use, let it warm up to room temperature before opening the factory package. When it comes out of the refrigerator, allow about 6-8 hours; from a freezer, about 24. This will prevent moisture from the air condensing on the surface of the film as it does on the outside of a glass of a cold summer drink.

Films are much more sensitive to storage conditions between exposure and development. This period should always be kept as short as possible, particularly in the summer. When black-and-white films are held undeveloped for several weeks in hot, moist weather, the highlights seem to decay slowly and the shadows to become more developable, cutting contrast. After a while, there is a general fading of image density (up to 50 percent after two or three months) and a growth of all-over fog.

Reversal color films, with three layers of black-and-white sensitive emulsion, may exhibit strong shifts in color balance between exposure and development as the three layers of image decay at slightly different rates. On a trip, color films should be sent back by air mail for development as rapidly as possible. (Not by train nor by ship mail, where they may lie in the hot hold of a boat for a week or more!)

If this rapid development is not possible, they should be kept as cold as circumstances permit. This applies to black-and-white films as well, of course. In either case, they may have picked up considerable moisture from the air during the time they were in the camera and in extreme weather, they should be dried before shipment or storage. This isn't as difficult as it may sound. Small containers of silica gel are available. About one-half ounce sealed into a container with the film will bring down the relative humidity to about 30%. The silica gel can be reactivated by heating it in an oven at 300-400 for about a half hour. Some brands are color-keyed to turn a fairly deep blue when they are suitable for use.

Extremes of heat and moisture will still affect films after processing, but only reasonable care is required. Avoid hot attics, damp cellars, and the immediate neighborhood of steam pipes or hot-air registers. Dampness and direct sunlight attack all organic (and some nonorganic) color dyes. Notice how fast, for example, the red ink on outdoor posters fades away. Films kept dry, dark, and cool will last a long time, however, and you can expect the dyes in modern color transparencies to remain good for many years.

As the summer temperatures rise, film processing requires more care, particularly with 35-mm, but is perfectly practical under ordinary amateur conditions up to around 95 F for black-and-white. Color results will not be satisfactory when the wash water runs above 75 F for Anscochrome or 77 F for Ektachrome. The technique of "partial processing" explained later, will help when conditions are extreme.

The key to successful black-and-white processing is the temperature at which the water supply is running. At the recommended optimum temperature of 68-70 F, the gelatin layer of the film should not be subjected to more than about five-degree changes from solution to solution. It is safer, especially with 35 mm, to keep this down to 1 or 2 degrees. As the temperatures rise, the change should be held to a minimum. The easiest method is to let the water run until it reaches equilibrium and to bring all processing solutions to the same temperature as the wash water. Even in the northern part of the U. S., this may be as high as 80 F. However, if all solutions are at exactly the same temperature, reticulation (uneven expansion and contraction which may actually permanently "wrinkle" the emulsion) and frilling and blisters can be avoided.

Hot weather processing can be roughly divided into work between 68 to 80 F, and work from 80 to 95 F. In either case, it is best to keep the whole process as rapid as possible in order to prevent damage to the wet and relatively tender emulsion.

It is important, particularly at these elevated temperatures, to work with fresh solutions throughout. Their action will be more rapid and they are less likely to have deteriorated in storage. A full, tightly capped bottle of developer will usually keep quite well for two to three months at 65-70 F, but may oxidize in only a few days when stored at 90-95 F. (Incidentally, oxygen will diffuse through polyethylene bottles and shorten the life of most developers. Amber glass is still best.) Fixing solutions, too, will store quite well for at least three months at 65 F, but are apt to sulfurize and turn milky or frothy after only two weeks above 75 F. Mix all solutions in small quantities during the summer and replace them promptly.

Developer characteristics also tend to (*Continued on page* 128)

USEFUL HOT-WEATHER DEVELOPERS

Developer	Temperature range (manufacturer's recommendations)	Manufacturer's special instructions
Clayton P-60	60–85 F	Use of special hardening not necessary to 85 F.
Clayton Film-All	60–85 F	
Edwal Thermofine	65–90 F	At 95 F, reduce time 20% from time at 90 F; at 100 F, reduce additional 20%. No stop bath necessary above 75 F; if stop-hardener is used, it should contain 80-90 grams sodium sulfate (anhydrous) per quart. Use Edwal Quick Fix, diluted 1:3 fixes in 30-60 sec; hardens in 60-90 sec; Edwal Hypo Eliminator, diluted 1:9 for 30-60 sec; wash in running water 5 min.
Ethol UFG	60–90 F	May be used at higher temperatures with proper care (see text). Above 75 F, after development use hardener-stop bath (1/2 oz sodium bisulfite, 1/2 oz potassium chrome alum to 1 qt water). To double development times at any given temperature, add 16 grams sodium bisulfite to each gal of UFG, 28.8 grams to each gal of replenisher solution.
Ethol 90	60–90 F	May be used at higher temperatures with proper care (see text). Hardening recommendations as for UFG.
777 Panthermic	60–90 F	Standard working temperature: 80 F. Above 72 F do not transfer film to water, ordinary acid stop bath or directly to hypo; use acid-chrome alum hardener stop bath (see text).
FR X-500	60–85 F	Can be used up to 95 F with proper care (see text). Above 68 F, add 1 oz FR liquid Hardener to each 32 oz of diluted FR Rapid Fixol; immerse for 3 min in fresh bath.
FR X-33B	60–85 F	As above.
FR X-22	60–85 F	As above.
FR Electronic Flash Developer	60–85 F	As above.

HOW TO TAKE LOW-BUDGET UNDERWATER PICTURES

By ERNEST H. BROOKS
Brooks Institute of Photography

THE strange and wondrous "silent world" below the water is now within reach of any amateur who can swim and who has about $32 to invest in underwater equipment. Perhaps the chief development making this possible has been the introduction of a simple, underwater roll film camera —the Mako Shark—which sells for $19.95.

Another technical advance—the development of high-speed color film—has made it possible to record the impressive marine life and geological formations beneath the surface in color without expensive flash equipment.

These two innovations have added a new dimension to one of the most increasingly popular sports in America today—skin-diving and "snorkling." Underwater photography no longer requires complex or expensive apparatus. With a camera like the Mako Shark, a snorkel tube, foot fins or "flippers," and a face mask, the exciting land beneath the water's surface may be photographed by anyone.

Any amateur can make good underwater pictures in either black-and-white or color with the Mako Shark and existing light. I recently tested this camera while filming some 16-mm motion picture footage off the west coast of Mexico. The Shark is essentially a box camera that takes 620 film and has a molded plastic viewing frame with a peep sight on top of the case. There is also a film counter window in the rear of the case.

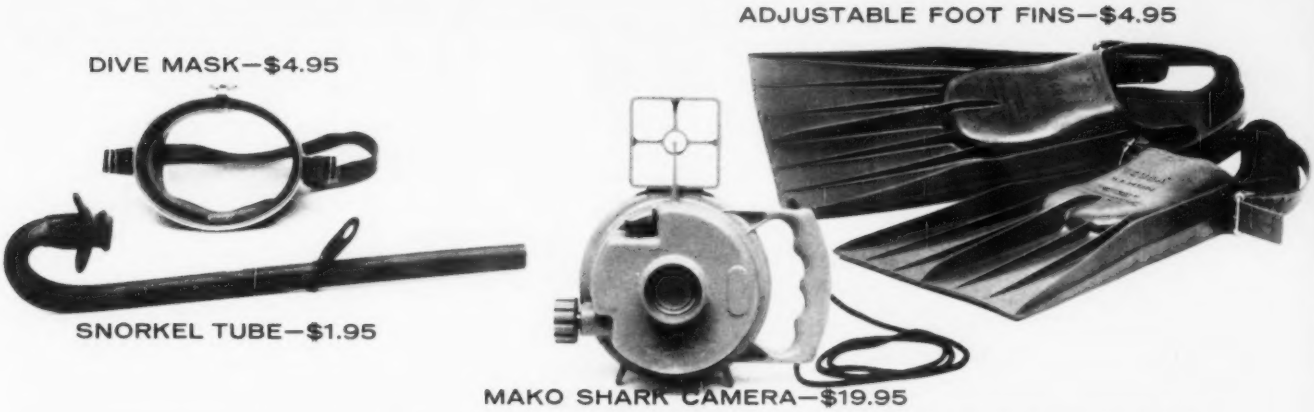
Its shutter release is on the upper right-hand side of the case, and it may feel slightly stiff in comparison to other cameras. But once you learn to *squeeze* and not jerk the shutter, you'll reduce greatly the possibility of getting pictures blurred by camera movement. Since the fixed shutter speed of the Shark is about 1/55 second, this problem can be licked by experimenting with the camera before entering the water to determine what method of holding the camera suits you best.

The Shark is also a fixed-focus camera, so the focus must be estimated. I've found that the best results underwater are obtained when shooting all subjects at a *visual* distance of eight (*Continued on page* 161)

Carroll Seghers II

Harvey Shaman

ALL YOU NEED FOR UNDERWATER PHOTOGRAPHY— $31.80



Equipment courtesy of Richards Aqua-Lung Center, New York, N. Y.

TAKE YOUR CAMERA BOATING FOR

PICTURES AFLOAT

By PETER BARLOW

PROFESSIONAL MARINE PHOTOGRAPHER

Power boat photographs best when bow is not shaded and light comes from ahead to highlight cockpit and windshield.

Sailboats are best photographed from leeward with light from direction boat is headed to model sails.

Boats are splendid subjects to photograph. They offer great variety in shapes, light and shadow patterns, action, and speed, combined with many moods and textures of the sea. I have become so fascinated with marine work that it is hard for me to be enthusiastic about picture taking on land. Of course, there are many interesting subjects right in and near the harbors that can be taken from shore but the real fun of this work begins when you are no longer land-bound and can go out in a boat to shoot pictures.

The camera used outdoors on land will probably be equally satisfactory on the water. However one that is simple to use and easy to reload will be greatly appreciated on a small boat, especially in a choppy sea. Often in a matter of seconds a good boat photograph is either made or lost and if one has to spend a lot of time with all sorts of gadgets and adjustments the picture will most likely be lost. A twin-lens reflex camera would be ideal or perhaps a 35 mm for color if you prefer. Two cameras would be handy since the opportunity for a particularly nice series of pictures always seems to present itself when you're on frame number eleven of a twelve-exposure roll.

Use a yellow filter (K-2) at all times with black-and-white film. It will darken the sky and add to the contrast of the sails and clouds against it. It serves the added purpose of keeping salt spray off the lens. When shooting in color use a polarizing filter for the same purpose. A sunshade is also helpful. Carry an exposure meter at least the first few times, you will be surprised at how much more light there is on the water. Almost always exposure will have to be reduced by at least one stop less than would be required on land for a subject of similar tonality under the same lighting conditions.

To some extent the type of boat you shoot will determine the kind of subject matter possible. For photos of all kinds of boats (*Continued on page* 158)

DO'S AND DON'TS FOR MARINE PHOTOGRAPHY

- Use a fast shutter speed; 1/250 if possible.
- Have your camera set for the most likely lens opening and shutter speed when you first start out. For example, using Verichrome Pan film on a bright day most of your exposures would be between f/8 and f/11 at 1/250.
- Shoot lots of pictures—the opportunity may not be the same again. It is difficult to click the shutter at that exact moment when a sailboat is looking her best, riding well in the water with a nice bow wave or spray flying up, so several exposures will give you a better chance.
- Try to keep the horizon level when shooting; at least make it so when you print the pictures.
- Know your subject matter. A knowledge of boats will help you anticipate situations worth photographing.
- Don't let salt water get all over your camera, but accept the fact that some spray is bound to get on it. Clean your filter or lens frequently.
- Don't get the wake of your own boat into the picture. It usually doesn't help the composition to have a nondescript white area in one corner.
- Don't get too close to racing boats especially at the starting line unless you are thoroughly familiar with racing tactics and know where to be without interfering.
- Don't take pictures at all if doing so endangers another boat. When speeding to overtake a likely subject, stay clear of other boats that may be in your path.
- Don't forget to bring a lot of film and keep your exposed rolls in a watertight container of some sort. A small roll of tape may be handy to seal your exposed film when the gummed-paper tabs are too short.
- For high-angle pictures, shore locations such as a bridge or dock often can provide a good viewpoint.
- When photographing a fairly large boat, an effective low-angle shot often can be taken from a dinghy or rowboat.

Backlighting (far left) gives dramatic silhouette with highlight on water and pattern of seams in sails with light shining through.

Spinnaker (left), a large balloon-like sail, is particularly photogenic when boat is sailing before the wind (wind from astern).

SEE PAGE 156 FOR THE NEW CHALLENGE ASSIGNMENT: "THE CROWD"

Results of CHALLENGE! *No.* 7

PORTRAIT WITH

Once again the entries poured in for Challenge No. 7, but it soon became obvious that "Portrait with Hands" was proving a tough assignment. Older people and children seemed to be the overwhelming choices, as the pictures showed hands in various poses.

But too many placed them in stiff, unnatural positions and turned out stilted versions of the famous Karsh technique. The successful entries were those in which the hands were an integral and usually spontaneous part of the over-all composition.

The often dramatic relationship between hands and face was clearly demonstrated by the many outstanding versions submitted.

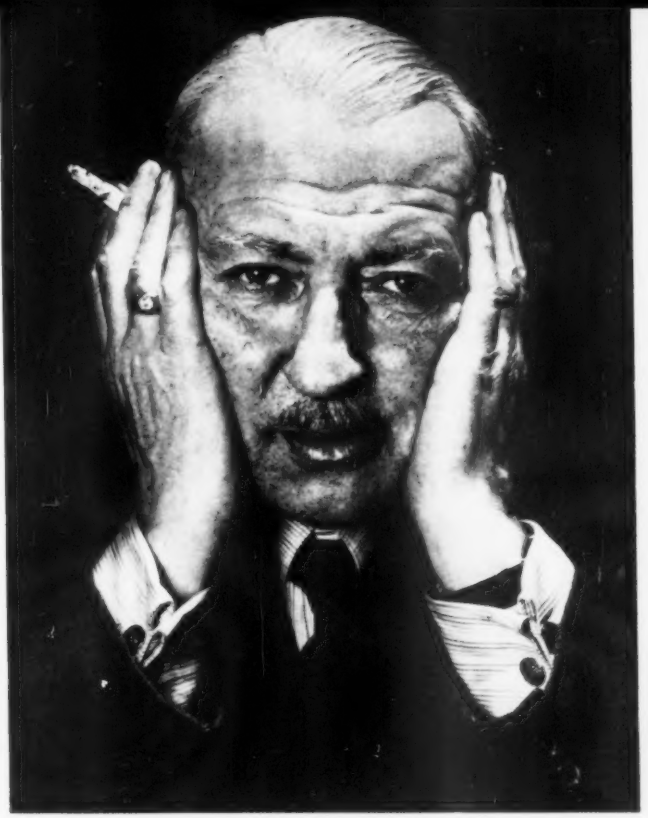
THIS WAS PRO IVAN MASSAR'S APPROACH TO THE ASSIGNMENT

The veteran Black Star staffer from Houston, Tex., saw his assignment in this soft double portrait, with the woman's graceful hands serving as a divider between the two. He captured this tender mood with a Visoflex and a 125-mm Leica lens, exposing 1/25 second at *f*/5.6 on Tri-X film. Existing windowlight provided illumination.

HERE'S HOW OUR READERS MET THE CHALLENGE

In the living room of his home, **SANFORD RACKOW** of Jamaica, N. Y., made this animated photograph of his mother. He used a Hexacon with 58-mm Biotar *f*/2 lens, exposing 1/20 second at *f*/4 on Tri-X.

HANDS



This striking portrait of his father was made by **DR. GIOVANNI CANDELO**, an Italian amateur living in Spain. He used a Rolleicord and ortho film. To achieve hairline sharpness, he lighted his subject with one spot and a diffused flood.

A careful arrangement of hands, flower, and face made this strong composition by **ERWIN HARRIS** of Pittsburgh, Pa. His camera was a Rolleiflex with 75-mm Tessar *f*/3.5 lens, exposure 1/125 sec at *f*/5.6 on Royal X Pan with window light.

Strong printing helped heighten the dramatic starkness of this portrait by **ITALO P. B. SCANGA** of Williamston, Mich. He made it with a Contax IIa, 35-mm Sonar *f*/1.5 lens, exposing 1/25 second at *f*/2 on Tri-X film.

While photographing other children at a birthday party, **ED CLERK** of New York City saw this beautiful child watching him. He caught her curiosity with his Canon IV-S2 and 85-mm Nikkor *f*/1.5 lens, exposing 1/100 second at *f*/2.8 on Tri-X.

A GUIDE TO COLOR FILMS AND CONVERSION FILTERS

THIS should be a very productive summer for color photographers. We have Super Anscochrome Daylight Type, fast enough to let us freeze action at the highest shutter speeds, and now its twin, Tungsten Type, to shoot available-light color in all but the dimmest indoor situations. Kodak has recently given us 35-mm Kodacolor, the first color-negative still film in this size, and Ektacolor Type L, a negative sheet film specially balanced for time exposures.

Fifteen color emulsions are now on the market, each with its own characteristics, each offering advantages. Keeping track of the filters needed to shoot these films

	FILM	DESCRIPTION
Daylight Films	Anscochrome Daylight Type	Designed for shooting in bright sunlight on clear days, between two hours after sunrise and two hours before sunset. For other daylight conditions, filters may be needed for accurate color reproduction. The only positive color films recommended for electronic flash. A warming filter may be desirable with slightly colder electronic flash. (Ansco, in fact, recommends an 81A warming filter.) No filter is necessary with blue flashbulbs.
	Super Anscochrome Daylight Type	
	Ektachrome Daylight Type (Process E-1, sheet film)	
	Ektachrome Daylight Type (Process E-2, roll film and 35-mm)	
	Kodachrome Daylight Type	
Films Balanced for Clear Flash	Anscochrome Flash Type**	Use with all clear flashbulbs except SM and SF. If it is desirable to use one film both indoors and out, it is generally better to choose a tungsten (flash, 3200 K. or 3400 K) than a daylight film, since there is considerably less loss in film speed and color is usually more faithful.
	Ektachrome Type F (Process E-2, roll film and 35-mm)	
	Kodachrome Type F	
Type A 3400 K Films	Anscochrome Tungsten Type 532	Balanced for shooting indoors with photoflood lamps, which burn at 3400 K. Available only in 35-mm.
	Kodachrome Professional Type A	
Type B 3200 K Films	Anscochrome Tungsten Type	Balanced for 3200 K incandescent lamps. Usually professional studio lighting, 3200 K lamps can also be purchased in most smaller photo lamp sizes. If no color temperature is marked on the lamp, assume it to be *3400 K*.
	Super Anscochrome Tungsten Type	
	Ektachrome Type B (Process E-1, sheet film)	
Color Negative Films	Ektacolor Type L	Kodacolor is a dual-purpose roll film, for shooting without filters in daylight or with clear flash. In sheet film, Ektacolor Type L is intended for use with shutter of 1/5 sec or longer; Ektacolor Type S for exposures of 1/25 sec or shorter.
	Ektacolor Type S	
	Kodacolor	

under the various types of illumination has become quite a problem. And, as the many inquiries from our readers indicate, a very prevalent one. In answer to these requests, we have prepared this up-to-date guide of color films and the conversion filters necessary to re-balance them to the five basic types of photographic light sources.

The large bold face numbers in the chart are conversion filters recommended for a given film-illumination combination. Listed directly below are exposure indexes with the filter. Keep in mind that color films always reproduce the subject most accurately with the light source for which it is balanced. These combinations are indicated in the chart by black blocks, and of course do not require conversion filters. For an analysis of these color films by a leading professional photographer, see David B. Eisendrath's *Color Clinic* column on page 42.

Use this chart to take stock of the conversion filters you have; they probably can be used with more films than you realize. Looking down the chart you will notice that one filter will usually convert all films of a particular type to any one light source. An 80B filter, for example, will balance any daylight film to 3400 K photofloods.—▶

Conversion filters are listed in **BOLD FACE**, with exposure indexes and flash guide numbers given immediately below in LIGHT FACE.
Black squares indicate film-illumination combinations that do not require filters.

DAYLIGHT	CLEAR FLASH* (3800 K)	PHOTO-FLOOD (3400 K)	3200 K STUDIO LAMPS	ELEC-TRONIC FLASH	AVAILABLE SIZES: 35-mm bulk	35-mm cartridges	828 Bantam	127	120,620	116,616	Sheet Film
32	Not Recommended	**80B** 12	**80B** 12	**81A** 32	●	●	●	●	●		●
100	Not Recommended	**80B** 40	**80B** 40	**81A** 100		●			●		
12	**80C** Guide No. 55	**80B** 4	**80B+82A** 2.5	See Instruction Sheet							●
32	**80C** Guide No. 90	**80B** 12	**80B+82A** 8	32	●	●	●	●	●		
10	**80C** Guide No. 50	**80B** 5	**80B+82A** 3	10	●	●	●				
85C 25	Guide No. 125	**82A** 20	**82B** 16	Not Recommended	●	●	●	●	●		
85C 16	Guide No. 120	**82A** 16	**82C** 12	Not Recommended	●	●	●	●	●		
85C 10	Guide No. 95	**82A** 12	**82C** 10	Not Recommended	●	●	●				
85 25	**81C** Guide No. 120	32	**82A** 25	Not Recommended	●						
85 10	**81C** Guide No. 80	16	**82A** 12	Not Recommended	●	●					
85B 20	**81D** Guide No. 110	**81A** 20	25	Not Recommended							●
85B 80	**81D** Guide No. 220	**81A** 100	100	Not Recommended		●			●		
85B 6	**81C** Guide No. 60	**81A** 8	10	Not Recommended							●
85B 20 (at 1/5-sec exposure)	Not Recommended	**81A** 12 (at 5-sec exposure)	16 (at 5-sec exposure)	Not Recommended							●
85C 25	Guide No. 120	**82A** 20	**82C** 16	**85** 12							●
32	Guide No. 120	**82A** 20	**82C** 16	**85** 12		●	●	●	●	●	

*Guide Number for No. 5 or 25 flashbulbs in polished reflector, shutter speed 1/50 sec or slower.

**Anscochrome Flash Type has recently been discontinued.

SUMMER PICTURES

It's hard to get close to kids in the water without getting splashed or dunked. You can shoot from boat or dock, use long-focus lens, or stand in water as Ed Lettau did for this strong picture, made with Nikon and Plus-X; 1/250 at f/8.

Peter Sahula

Hiro Wakabayashi

TREES: CENTER OF INTEREST OR SETTING FOR THE SUBJECT

There will be trees in your pictures this summer—the redwoods of California, the tall elms of Ohio, the live oaks of Louisiana, the scrub pines of Cape Cod, any of a thousand other kinds. You can let the trees help you make a picture, or you can make them your only subject. Here are two imaginative ways to put trees in a picture. **Peter Sahula** of Los Angeles took his pretty wife Gloria to a park and photographed her framed under a vault of verdure. He used a 4x5 Graflex with 7½-inch Optar f/5.6 lens, and exposure of 1/25 second at maximum aperture, on Anscochrome Daylight Type film. **Hiro Wakabayashi,** with the clean economy of a Japanese artist, singled out one tree and let the sun's brightness burn through its branches. His camera was a Rolleiflex with 80-mm Xenotar f/2.8 lens; exposure was 1/250 second at f/16 on Super-XX film.

Edward Wallowitch

SUMMER'S SOFT SHADE IS KIND TO CHILDREN

The sun of summer is so strong that it intimidates any human subject, and children are

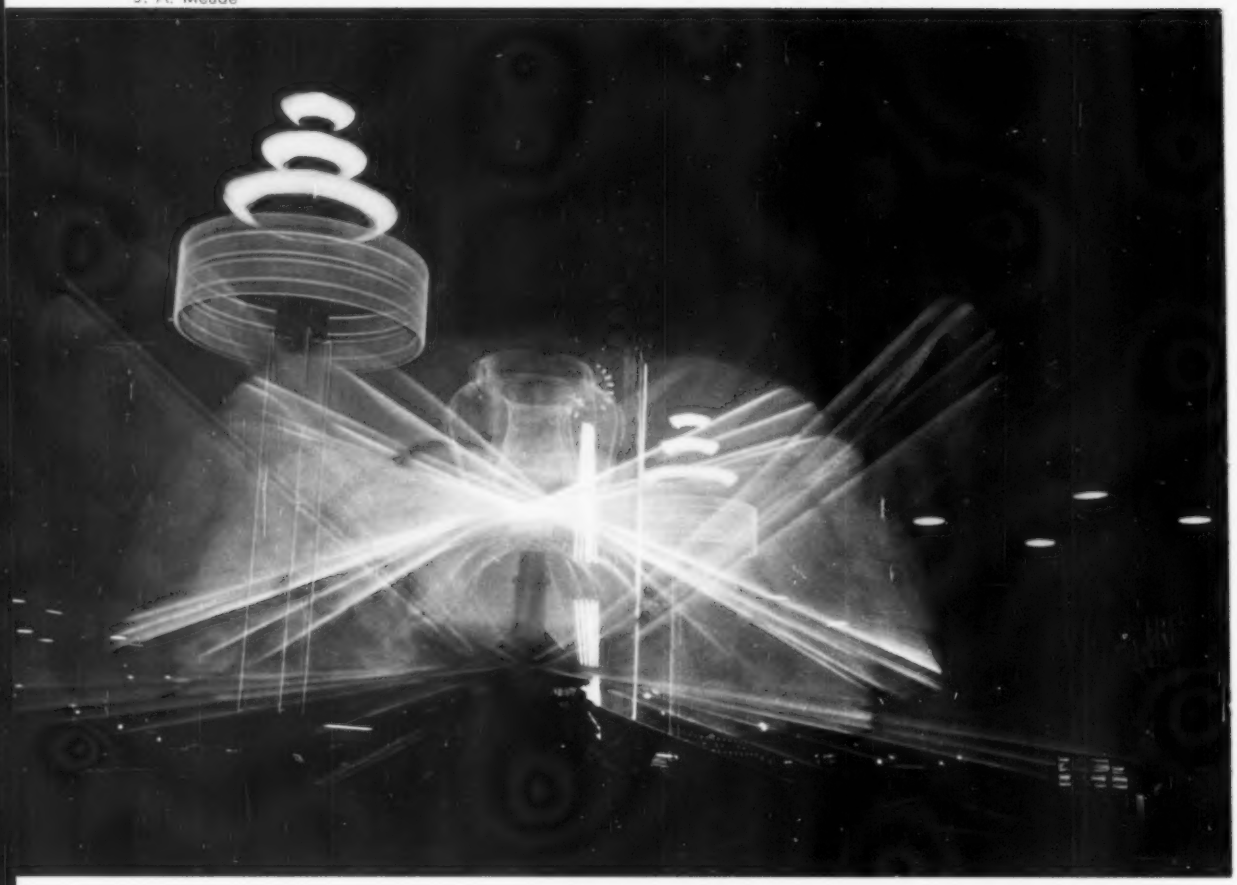
PICTURES continued

Jacques Lowe

especially prone to grotesque squinting. They need the diffused light of an overcast sky or open shade. **Edward Wallowitch** photographed the little blond girl in a shady spot, using a Leica IIIf with 50-mm Summitar f/2 lens and Kodachrome, with exposure of 1/60 second at f/5.6. **Jacques Lowe** shot the little sun worshipper under an overcast sky with a Hasselblad, on Tri-X film, at 1/125 second, f/11.

PICTURES continued

J. A. Meade

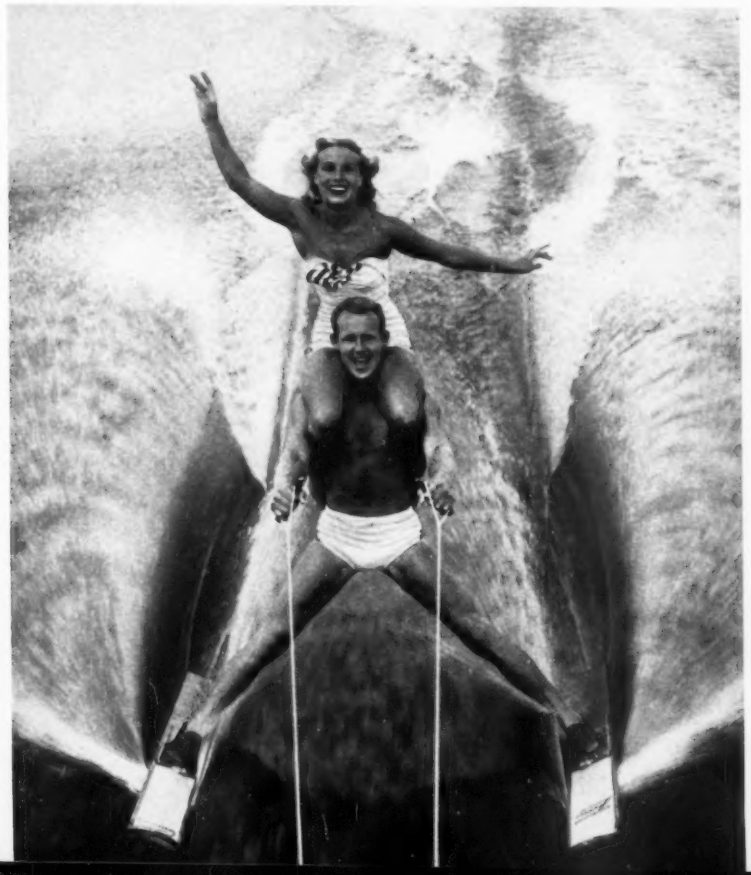


IT'S A SEASON OF VITAL, VIBRANT ACTION

Russel Kriete

Shoji Yamamoto

Here are five diverse summer action pictures. **J. A. Meade** of Los Angeles made several time exposures to get his impression of the attractions at Venice Beach by night. His camera was a 4x5 Graphic View with 203-mm Ektar f/7.7 lens, stopped down to f/22, and his film was Ektachrome Daylight Type. In Chicago, **Russel Kriete** caught the two boys enjoying a hydrant shower, using an Exakta with 90-mm Angenieux f/1.8 lens and Kodachrome at 1/50 second, f/4, with electronic flash to supplement daylight. **Shoji Yamamoto** photographed the Japanese girls jumping rope with a Rolleiflex and yellow filter, on fast pan film, at 1/250 second, f/5.6. **Dennis Hallinan** shot the "doubles" water-skiers from a specially equipped camera boat at Cypress Gardens, Fla. He used a 4x5 Linhof with 150-mm Apo-Lanthar f/4.5 lens, and Verichrome Pan film. He was able to stop the action at 1/100 second, f/11, because he was moving at the same speed as the skiers. **Sol Libsohn** made the shot of the running boy on a New York street, using a Leica M-3 camera with 50-mm Elmar f/3.5 lens and Plus-X film. His exposure: 1/500 sec at f/4.5.



Sol Libsohn

Dennis Hallinan

PICTURES continued

SUNSET IS SUMMER'S MOST-PHOTOGRAPHED MOMENT

This magnificent sunset, made at low tide across the beach at Old Orchard, Maine, is the work of veteran slide exhibitor **G. Lewis Johnson** of Winthrop. He used a Leica M-3 with 50-mm Summicron f/2 lens and exposed on Kodachrome at 1/50 second, f/5.6. The picture won a prize in POPULAR PHOTOGRAPHY'S latest Picture Contest.

"BEAUTY IS ITS OWN EXCUSE FOR BEING"

Girls are at their loveliest in summer—in sun or shadow, walking in the city or romping in the country, at your vacation spot, in your own backyard. They will always be the camera's favorite subject. See how two masters of glamor photography have outdone themselves here. **William Reed Woodfield** of Los Angeles made the inviting portrait of Baroness Charlotte Bergsoe in rural France, using a Leica M-3 with 105-mm Nikkor f/2.5 lens. His exposure, in open shade with some sunny highlights, was 1/100 second at f/11, on Tri-X film. **Peter Gowland** of Santa Monica used his own backyard pool as the setting for his bright and beautiful nude, shot with a Rolleiflex camera which has a 75-mm Planar f/3.5 lens. On Ektachrome Daylight Type film, he exposed for 1/100 second at f/8.

Peter Gowland

←
William Reed Woodfield

Hal Berg

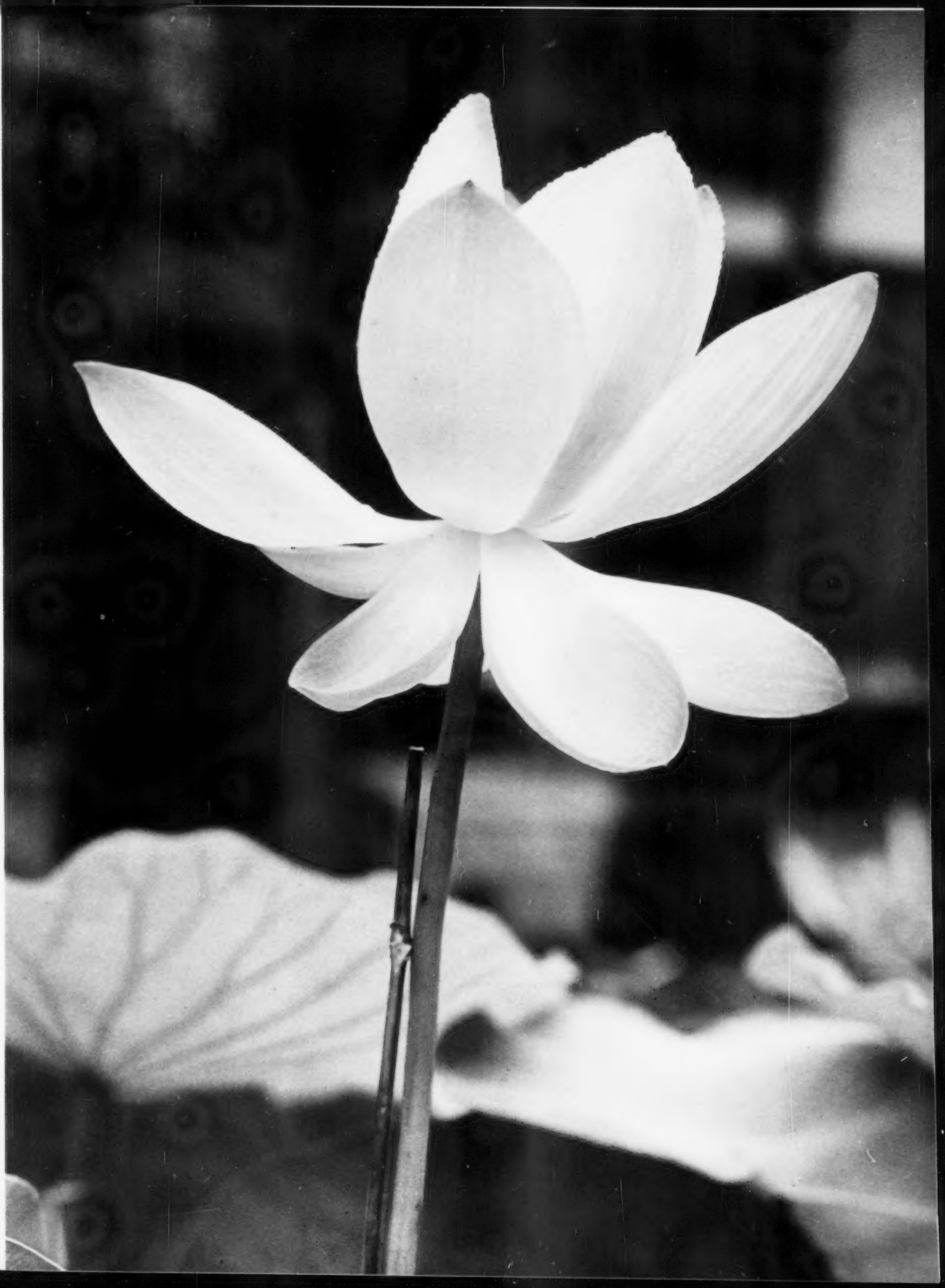
FLOWERS CHALLENGE THE CAMERA TO SEE FRESHLY

Harold Feinstein

Jun Miki

It's comparatively easy to take good seed-catalog pictures of flowers: master a formula and stick to it. But to be original, as these three photographers were, requires rare imagination. **Hal Berg** decided on an ant's-eye view of a cluster of daisies he found on his Maine vacation. His camera was a Pentacon with 50-mm f/2 lens, his film Plus-X, and his exposure 1/100 second at f/2.8, through a red filter which served to darken the sky for contrast with the white flowers. **Harold Feinstein** looked down on his daisies from directly above, using a Canon with 50-mm f/1.2 lens, and Plus-X; he kept no record of exposure. **Jun Miki** of Tokyo picked a rarer flower: the lotus. Early on a rainy morning, he used a 4x5 Linhof camera with 150-mm Tessar f/3.5 lens; exposure was a slow 1/5 second at f/11 on Ektachrome Daylight Type film.

Courtesy Life, © Time, Inc.



Staying home all summer? Don't overlook native birds, animals, and flowers. There's plenty of **NATURE**

By ***RUSS KINNE***

Photographs by the author except as otherwise credited

HOW many photographers, amateur and professional alike, have watched the wildlife pictures produced by Disney and others and said, "Boy, would I love to do work like that!"? Generally, this idea persists for a few days or weeks and peters out gradually in the face of such things as car payments, photo equipment costs, dental bills, or the contractor's estimate for fixing the back porch. And, of course, the boss might have a few words to say about your taking a month or two off to go to Tanganyika.

One consoling note is that you don't have to head for the tall timber in order to produce a good collection of nature and wildlife pictures. Chances are some wildlife is already coming to you, or at least will appear with a small inducement. Flowers and trees are found almost everywhere. Insects are plentiful (sometimes too much so!). There is usually a pond or river nearby, and you can find aquatic mammals, frogs, salamanders, and wading birds there. In short, you will be a long time in exhausting the possibilities to be found within a half mile of your home. Even the apartment dweller will find these same wildlife subjects in nearby parks and zoological and botanical gardens.

Motorized Praktina can make as many as 420 exposures on a 50-ft roll of film, with its battery pack.

Minolta Autocord takes close-up attachment, is shown with Kagra air-operated release and tubing.

A battery of equipment is not an absolute necessity for nature work. Let's see what can be done with the materials on hand. A twin-lens reflex, rangefinder 35-mm camera, or even a box camera can be used for many shots, although there are limitations. If your camera will focus down to three feet or thereabouts and has a cable release socket, you will be able to work with flowers, trees, the medium-size and larger mammals such as squirrels, raccoons, skunks, opossums, armadillos, deer, and bear. Any bird robin-size or larger will be within your operating range. Flight shots may even be possible, although the bird must be quite close and focusing will be largely guesswork. Adding an inexpensive close-up or portrait lens will permit more flexibility. Small birds and mammals, small flowers, and even large insects may then be photographed satisfactorily.

If you have a single-lens reflex a great deal more is possible. With extension tubes you can photograph small subjects life-size or larger on the film. You can turn out startling shots of insects, details of flowers, beetle "portraits," leaf patterns, pictures of butterflies, small frogs and toads, salamanders, chipmunks, wood mice, and other small mammals, once they have become accustomed to the camera. Small birds may take longer to accept the camera as a harmless part of the scenery but they will eventually come in close enough.

With a moderate telephoto lens on your single-lens reflex you can get good shots of shy birds and mammals from a greater distance and record small subjects on film without the distortion that is unavoidable when working close with a normal lens. A moderate telephoto will also allow you to photograph flowers without climbing fences or wading into a pond for close-ups. For instance, the pond lily was photographed with a telephoto lens from about eleven feet. With a normal lens I would have had to wade in waist-deep water to get the same shot, and standing on a muddy bottom does not make for steady camera handling! A long telephoto lens of 250 mm or more on the single-lens reflex opens up a world of new opportunities. Don't fall into the habit of thinking of the long lens only for distant shots. Use it whenever you want a larger image without getting too close to the subject, or when a normal or medium telephoto lens would produce objectionable distortion. This is an old stunt of good portrait photographers; you will run into fewer complaints from your subjects and your pictures will be better for it. Many times a wild bird will refuse to come within three or four feet of a shiny and mysterious camera, though they will come to bait eight or ten feet away. The chipmunk picture is a good example of this. The Hasselblad was focused on a small botanical label on which the chipmunk was in the habit of perching momentarily when running from the bait station to his hole with a mouthful of seeds. A 300-mm Kilfitt lens

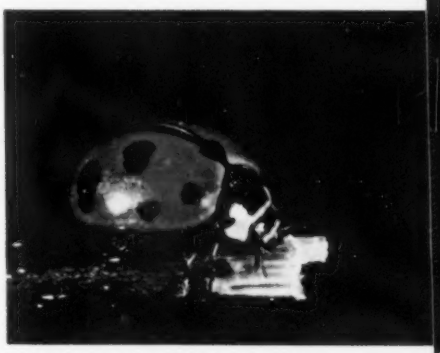
NEARBY

with extension tubes was used at a distance of about seven feet. Moving closer probably would have caused the animal to travel a different route.

Most bird and animal photography falls into one of three categories: remote-control, long-focus, or a combination of both. For distances up to 40 or 50 feet an air release will prove satisfactory in remote-control photography. The Kagra release is a good example of a well designed, inexpensive air release. A short cable release is screwed into the camera, and is actuated by a rubber piston in a small brass cylinder. Two lengths of vinyl plastic tubing, 20 and 13 feet long, are supplied to connect the piston to a

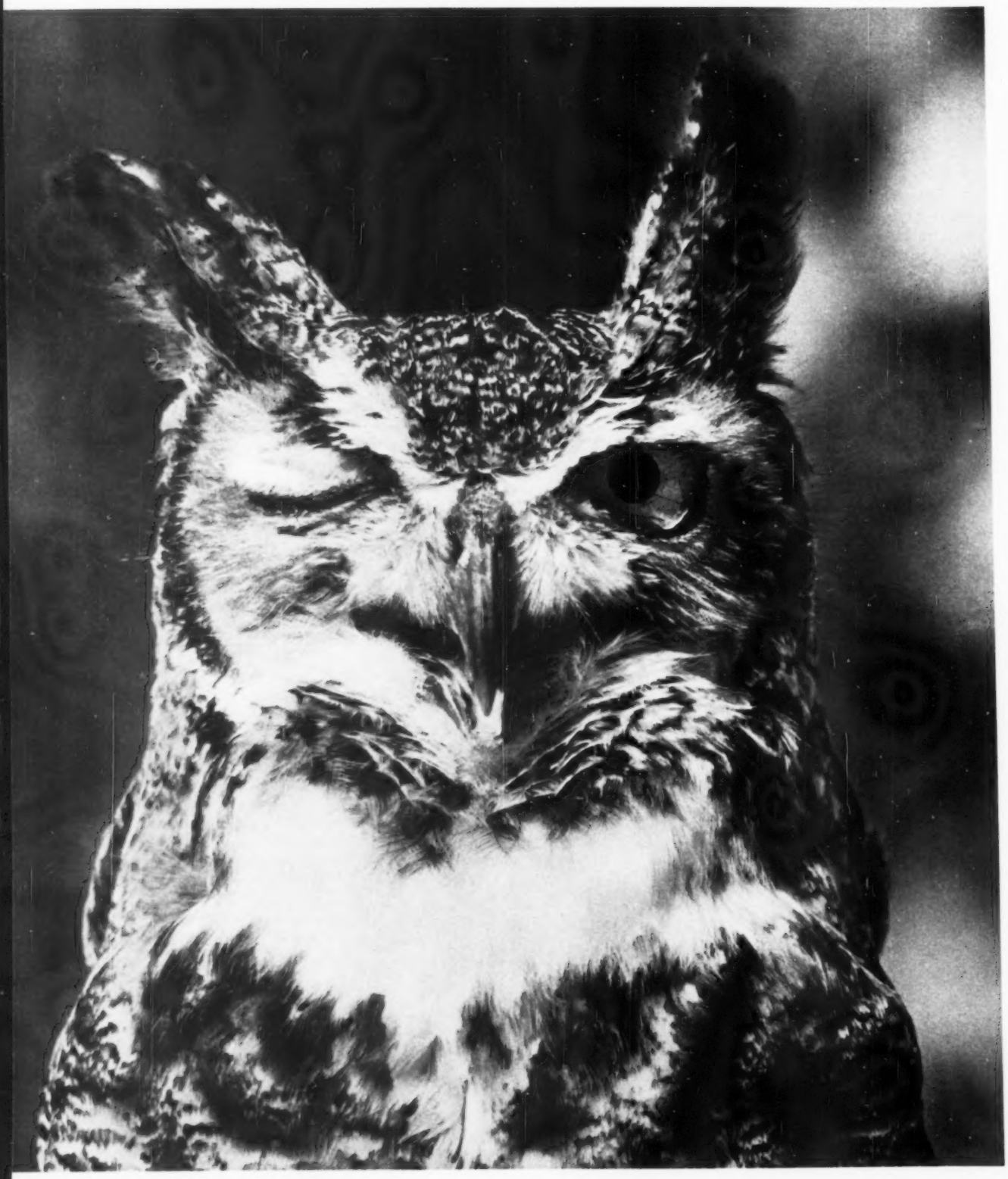
Day lily, common in most of U. S., was photographed by the author with Hasselblad, on Ektachrome, at 1/100 second, *f*/7, with cardboard reflector for fill-in.

Chipmunk was caught, peanut in mouth, with a Hasselblad and 300-mm Kilfitt lens with two extension tubes. Exposure, on Ektachrome, was 1/100 second at *f*/5.6, in bright sunlight.



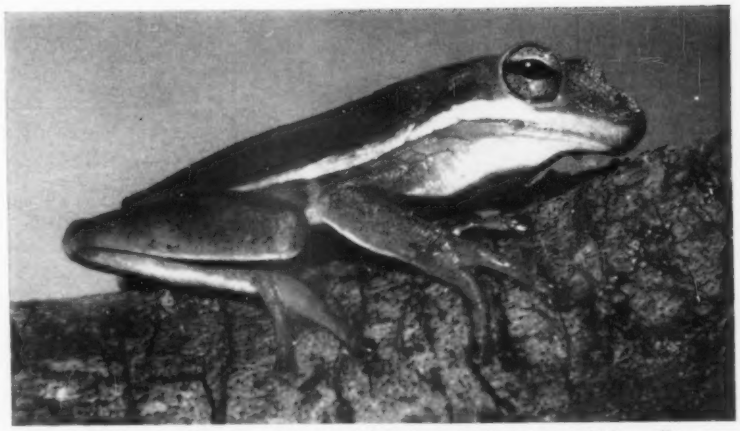
Ladybird beetle, 3X life size, shot with Praktina, 58-mm Biotar mounted in reverse position; speedlight, *f*/16.

Ring-billed gull was stopped on the wing with Hexacon, 150-mm Kilfitt, on Ektachrome; 1/200, *f*/7, with reflection from sand.



rubber bulb. The bulb is squeezed by hand to make the exposure. The two lengths may be used separately or together and are sufficient to reach a backyard bird feeder, for example, from inside the house. For greater distances more tubing can be added and a small bicycle pump used to set off the camera. Rubber tubing is unsatisfactory, as the stretch involved causes an appreciable time lag.

In my experience one of the best setups available is the Praktina 35-mm single-lens reflex with battery-operated motor and electric remote-control. A wire connects the camera to a push button inside a house or blind some distance away. When the button is pressed, the shutter is released instantaneously and the motor immediately rewinds the camera for the next exposure. It is possible to get a "candid" first shot, the next picture a half-second later showing the bird or animal eying the camera suspiciously, and with luck a third shot showing a hasty retreat. With this equipment the photographer need not approach the camera to reset it for another picture. The slight noise produced by the motor alarms wild creatures much less than the sight of a man walking up to rewind the camera. With very shy subjects the photographer can load fifty feet of film (*Continued on page* 148)



Green tree frog was shot from distance of 8 inches with Praktina and 58-mm Biotar on focusing bellows. Kinne used 3 speedlights indoors, shot at *f*/8 on Panatomic-X film.

←

Great horned owl's portrait was made with 300-mm lens, Praktina; 1/250 at *f*/8 in sun.

→

Mourning dove also required 300-mm lens; 1/100 at *f*/6.3 on Panatomic-X, from 15 ft.

Snail close-up was shot with Rolleiflex and Proxar lenses, at 1/50 second, *f*/22, in sunlight.

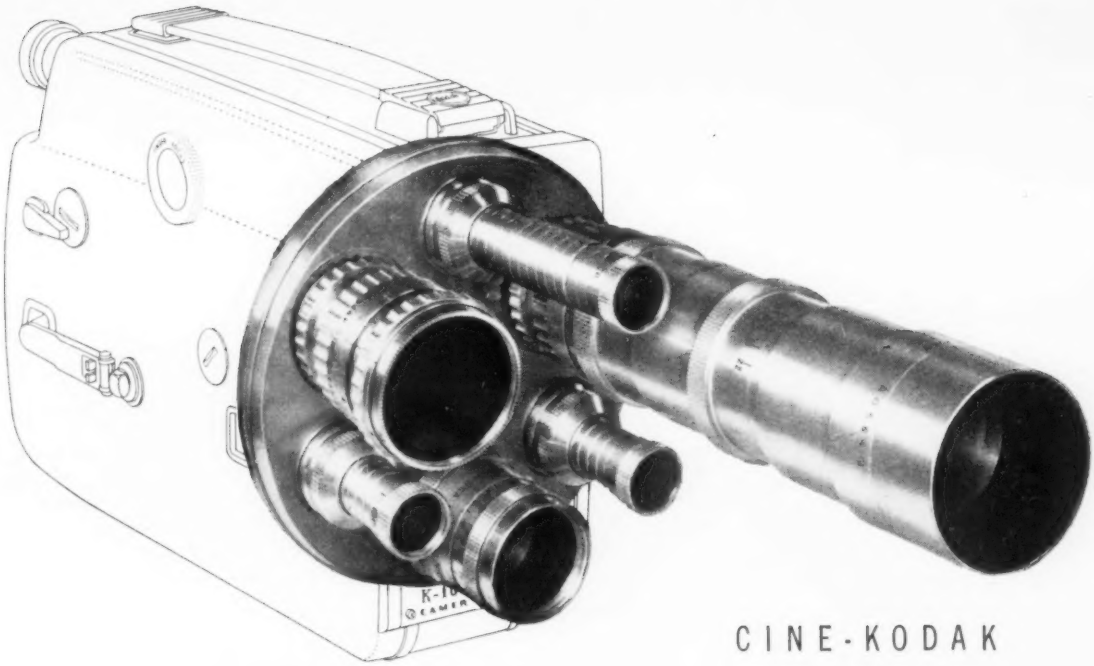
Josef Fiala

William Voregger

Ladybirds on march were caught with Leica, *f*/3.5 Elmar, extension tube; exposure ¼ sec, *f*/11.

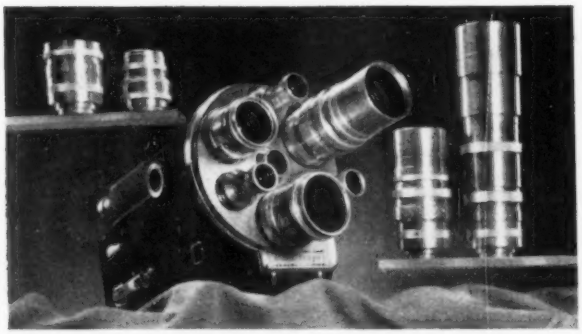
Do's and Don'ts in Summer Sports Photographs continued from page 81

SPORTS	LENSES	SHUTTER SPEEDS	FILM SPEEDS	FILTERS	DO'S	DON'TS
Motorcycle	Angle Tele.				see). Car will be sharp, background blurred. Or, using slow speed (1/25 to 1/50), car will be blurred and background sharp. For more effective pictures always try to get at least two cars in photo. To obtain head-on shots of cars, photograph at curve when they are coming towards you.	
2. Dog	Normal Tele.	1/200-1/300	High		Good pictures can be obtained when dogs break from trap, coming around bend at finish. If you can get inside the track obtain a photo from under the protective railing as dogs go by.	Don't photograph dogs while you are in standing position; better perspective can be achieved from low angle.
3. Horse & Harness	Normal Tele.	1/200-1/500	Med. High		Get pictures at paddock before race. This is a good place for close-ups as well as colors. With telephoto lens get horses breaking from gate when they are bunched together. Or if you can get into the infield of the track a dramatic shot is one taken at a low angle under the railing as a string of horses pass.	Don't pan your camera using a medium-high speed (i.e., 1/200) to stop action of horses because whereas you will stop the horse's body his legs will be blurred. To stop overall action choose a speed of at least 1/500.
4. Steeplechase	Normal Wide-Angle Tele.	1/200-1/1000	Med. High		Good pictures in this race are usually taken when horses come down over the jump. Here is where most spills occur. Spills often take place at the first jump when the horses are bunched and excited.	Don't take picture of horse and rider on ground after fall because drama has been "spent."
RODEO	Normal Tele.	1/500-1/1000	High		Prefocus on places where action is liable to take place, i.e., the opening gate, center of corral, etc. Ground-level shots will give more feeling of participation in the events than high shots.	Don't forget: if dust has clouded up the arena, use a yellow, or haze filter to cut through.
ROLLER SKATING	Normal Tele.	1/200-1/500	High		Shoot skaters approaching camera from low angle for dramatic emphasis. Using telephoto lens prefocus on spot where action will occur.	Unless a skater is doing a particular step, or you want a portrait of him (or her), don't photograph just one skater because more than one will make a more interesting picture.
ROWING, SKULLING	Normal Tele.	1/200-1/500	Med.		Pictures can be gotten from a bridge, boat, or shore. During race good pictures showing strained facial expressions can be obtained with a telephoto lens. Interesting pictures can be obtained by panning as boat passes in front of camera. Boats photographed in the diagonal of negative format convey a feeling of motion and drama. End of race will show exhaustion on faces.	If you are photographing from a bridge don't photograph the boat going under it since part of it will be cut off. Better shots are taken of boats approaching or pulling away from bridge.
TRAP & SKEET SHOOTING	Normal Wide-Angle	1/100-1/200	Med.	Yellow or Green	See archery.	See archery don'ts.
SOCCER, RUGBY	Normal Wide-Angle Tele.	1/500-1/1000	Med. High		Good places to get pictures: behind goal or nearby; when penalty kicks are played; from spectator's seat 20 yards from corner flag. High speeds are not necessary when photographing from a distance, such as high in the stadium; speeds of 1/50 to 1/100 sec will do.	See polo don'ts.
SAILING, YACHTING, MOTOR-BOATING	Normal Wide-Angle Tele.	1/200-1/500	Med.	Yellow Green Haze	Try for different angle shots on board, i.e., from mast, bowsprit, etc. Good backgrounds for portraits can be obtained by shooting from a high angle with blue water in background, or low angle with sky and clouds in background. Filter over lens will protect it from possible spray as well as give you good subject separation.	Don't forget to photograph boat on which you are sailing from close up as well as at medium distances from another boat or from shore.
SWIMMING, WATER-POLO, DIVING	Normal Wide-Angle Tele.	1/200-1/1000	Med.		Best swimming pictures of action are gotten at the beginning and end of race. Unless you are up high and fairly close you will get mostly splashing in the middle of the race. Water polo offers good action around goal. To procure good diving pictures it is best to study the dive (they are repeated by each contestant once) until you figure the best time and phase. Usually you will be shooting upwards so use a filter to darken sky.	If possible don't take too many distant pictures of events. Get close to action through a telephoto lens or try to get down close to the side of the pool for interesting action shots.
SKIN DIVING	Normal Wide-Angle	1/50-1/100	High		A fast wide-angle lens is the best for underwater photography. Shooting from below at a swimming figure above will give a light background and lend dramatic emphasis to the picture.	Don't use filters in underwater photography because they will cut down your light too much.
TENNIS	Normal Wide-Angle Tele.	1/200-1/500	Med. High		When you are able to shoot close-ups of players, do so from kneeling position, otherwise when player hits ball you will not obtain a full face. A telephoto lens will often render better results if a fast film is used; thus you can employ a small aperture and a high speed. Be sure to use depth-of-field scale. In doubles try to take pictures from end of court so you can get all four players in.	Since tennis players are normally dressed in white don't overexpose, or overdevelop. It is better to underdevelop slightly.
TRACK & FIELD	Normal Wide-Angle Tele.	1/500-1/1000	Med. High		In sprint races the beginning and end usually make best photographs; an exception is a hurdle race which can be photographed at any of the hurdle barriers slightly from the front at side of track. Distance races offer best pictures during first lap because runners are bunched together. Good shots of weight men can be obtained by shooting at a low angle against sky (it can be darkened with filter). Get shots of field man in jumps when he is in mid-air over the bar or at peak of jump in broadjump. An interesting shot of the pole vault can be taken with a wide-angle lens focused on the cross bar but also including the standard which holds bar in picture. The wide-angle lens, as jumper crosses bar, will give feeling of height.	Don't shoot runners against a spectator background unless you are using a very wide aperture, otherwise they will be lost in a distracting background. Photograph at a low angle; the sky will make a good background.
WATER SKIING	Normal Tele.	1/500-1/1000	Med.	Yellow Haze	If you are not able to follow skiers from a boat, shoot at a low angle from bridge or pier Low-angle shot from boat will lend drama to skiers being towed. Filters will often add to effect and also protect lens from possible water spray.	Don't forget to insure your camera against loss or damage if you plan to do a lot of water-skiing photography. Also make sure your camera is firmly attached around your neck.



CINE-KODAK

EDGE-TO-EDGE **SHARPNESS** IS YOURS WITH A K-100 CAMERA



The Cine-Kodak K-100 Turret Camera accepts any three Kodak Cine Ektar Lenses without mechanical or optical interference. Choice of seven superb lenses with standard "C" or interchangeable "S" Mounts: 15mm f/2.5 wide-angle; 25mm f/1.9 and f/1.4 standard; 50mm f/1.9, 63mm f/2.0, 102mm f/2.7, and 152mm f/4.0 telephotos.

You get razor-sharp movies with the K-100 Cameras because of their superb lenses. Kodak Cine Ektar Lenses give you the best possible definition and edge-to-edge sharpness, even when you shoot "wide open." Vital lens elements are made of Kodak's rare-element glass. The lenses transmit completely natural, color-pure light to your film, at all apertures.

As with these outstanding lenses, everything on the K-100 Camera is made to respond to your needs—the precision mechanisms that assure rock-steady pictures at any operating speed from single frame to slow motion . . . the powerful motor that runs 40 feet of film on one winding . . . plus a host of other features. In short, the specifications for the K-100 Cameras were to build to perfection . . . and not to price.

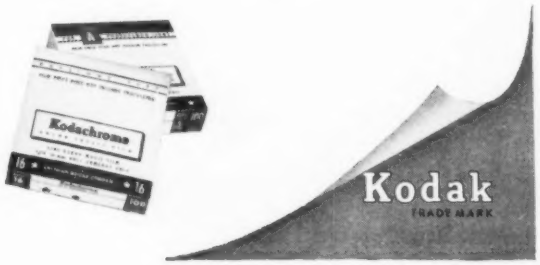
The K-100 Turret Camera gives you:

- Powerful motor—runs 40 feet of film on one winding
- Absolutely steady pictures—governor-controlled motor, non-wearing pulldown claw, and automatically regulated film-gate pressure at all speeds
- Interchangeable telescopic finders for all lenses
- Provision for hand crank for fades and dissolves
- Full speed range, 16 to 64 frames per second
- Auxiliary drive shaft available for motor drive

Cine-Kodak K-100 Turret Camera lists for $337 with 25mm f/1.9 lens. Single-lens model, for $299 with 25mm f/1.9 lens, accepts other lenses. Ask your dealer about convenient terms. Be sure to see the new Kodak PAGEANT Sound Projector, while you're there.

Prices are list and are subject to change without notice.

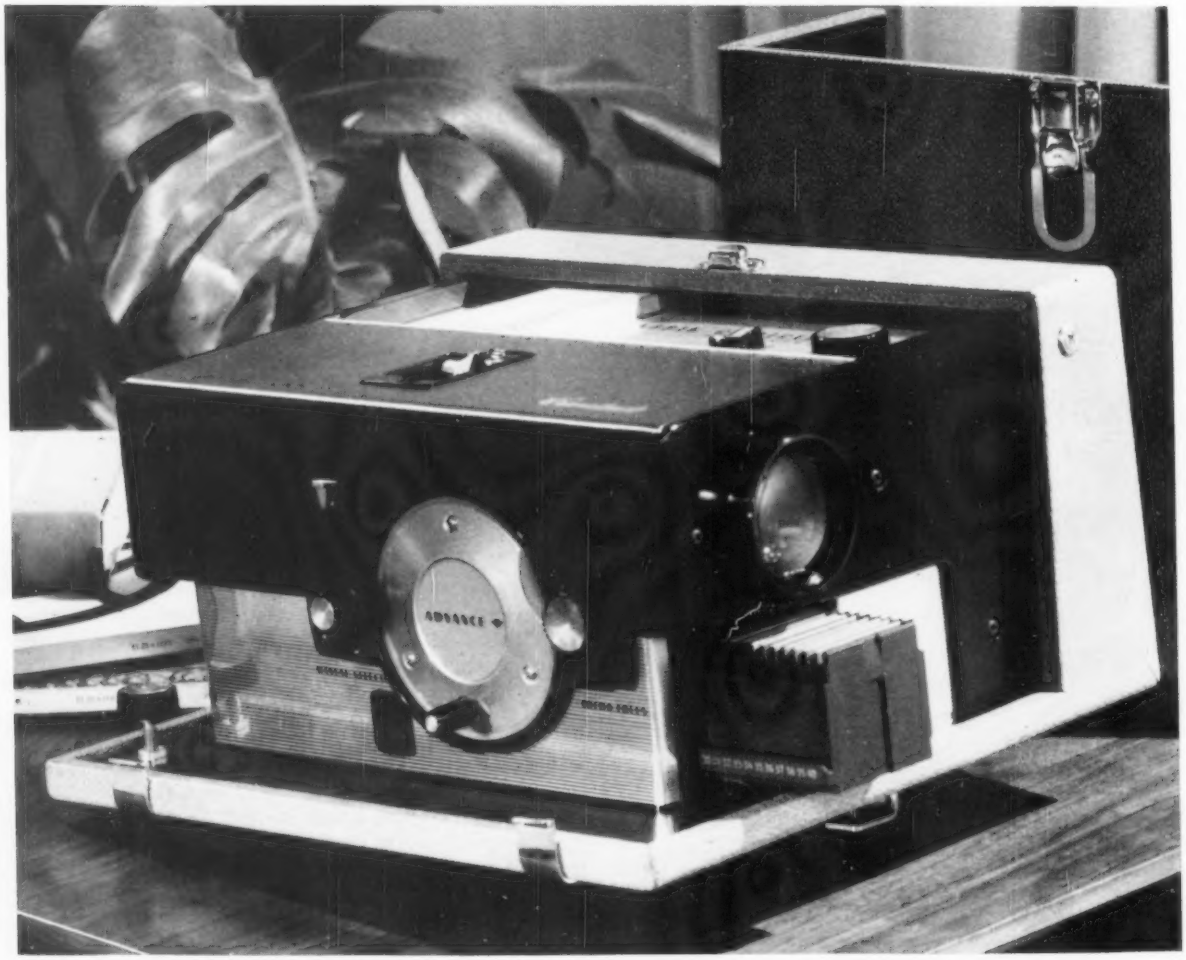
EASTMAN KODAK COMPANY
Rochester 4, N. Y.



The Kodak BULLETIN

Full Automation

You set up the show . . . your new Kodak CAVALCADE Projector does the rest. It does all the work . . . yet at every moment you're in full command. Here, in the projector that has everything, is true *automation plus control.*



Automatic, yes . . . but with a difference. Because you're always the boss . . . the CAVALCADE is your willing, capable servant.

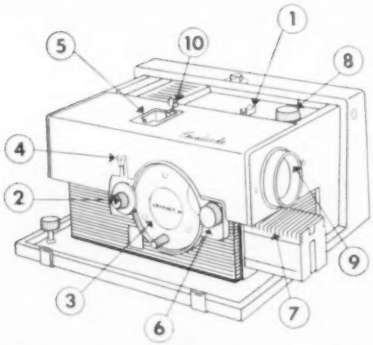
Even with your CAVALCADE set on full automatic, you can interrupt the cycle, hold individual slides on the screen as long as you like, reverse and repeat instantly. On "manual," you can edit, make corrections or substitutions in slide sequence, without even removing the magazine from the projector!

Slides stay in focus. Slides cannot jam, even if they're bent, warped, or dog-eared. You have 300- and 500-watt lamp-output switch to control screen brilliance.

Meet the fabulous new Kodak CAVALCADE Projector at your dealer's. You'll settle for nothing less, once you see it. Price, $149.50, superbly invested.

Details, next page.

plus full control



Fully automatic changing can be cycled **(1)** at 4, 8, or 16-second intervals by simply setting this knob at the position you want. Or, if you prefer, you can use the push button **(2)** on the projector for power slide changing.

Remote control power changing lets you sit as far as 12 feet away, interrupt the automatic cycle if you like, or regulate change intervals to suit yourself.

A flick of the advance wheel (3) interrupts the automatic cycle, too, just as the remote control does; provides the *manual* control you need for convenient slide editing, extra-rapid advance, or skipping certain slides.

Reverse order is quick and easy with the CAVALCADE. All you do is turn the handwheel **(3)** backwards and repeat as many slides as you like. No other projector reverses so easily.

Editing ejector lever (4) lets you switch slides in mid-show. This is another CAVALCADE exclusive. It means that with one swift motion you can replace any slide in the magazine without taking the magazine out of the projector. You can quickly edit your show—show *single* slides—correct a slide that's in up-side down or backwards—or load slides **(5)** while the tray is in the projector.

Slides stay in focus (6) because the CAVALCADE pre-conditions all the slides **(7)** with a stream of warm air. Set your screen image to razor-sharpness only once, and the CAVALCADE keeps it that way.

Interchangeable condenser system provides extra-brilliant, uniformly illuminated pictures from 35mm or Bantam slides. And an auxiliary condenser is available (extra) for "super-slides."

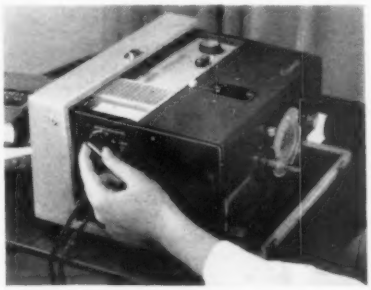
No flash, no lag between slides with the CAVALCADE. New type of changer shutter eliminates long dark periods between slides. Change interval is *less* than a second. Screen darkens instantly as slide changes, too—no glaring white-light flash.

Each slide is held safe from damage in a rust-proof protector **(7)**. The changer mechanism never touches your slides. Even warped, frayed, bent, or dog-eared slides change smoothly, without danger of jamming.

Elevation (8) and focusing (6) are quickly dialed, radio-like, with conveniently located knobs.

Quick-change lamps are easy to replace—a small lever on the lamp base does the job effortlessly.

Extra-fast *f*/2.8, *5-inch* Kodak Projection Ektanon Lens **(9)** is standard on the CAVALCADE, focuses down to four feet. 4-inch and 7-inch lenses are also available.



Brightness selector (above) gives you a choice of 300- or 500-watt projection for different projection conditions.

40 cardboard slides fit securely in the standard tray **(7)**, right-side up so they can't fall out. Indexing knob moves slide tray through "tunnel" (without projecting, if desired). Indexing window shows the number of the slide in projector position.

Special slide tray takes 30 mounts *of virtually any type*—glass, cardboard, metal, tape, etc. Available at your dealer's.

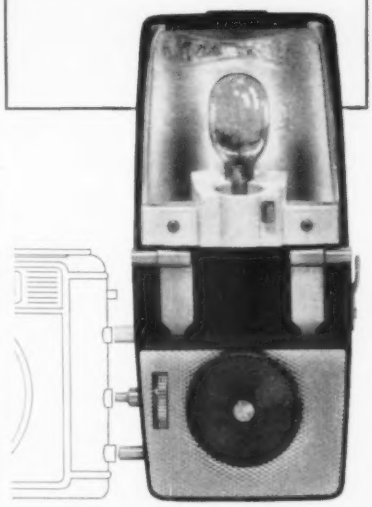
Movable pointer (10) puts an arrow-shaped silhouette on your screen so you can point out objects in your picture.

Carrying handle is integral with projector body to prevent accidental dropping.

Quickly removable cover protects your projector, has preview screen built in, detaches easily for use.

Price, list, is $149.50.

TWIST—FLASH!



You're right, it *is* a flasholder. But this one doesn't need batteries—now or ever. Or flash packs. Or plug-ins.

KODAK *GENERATOR* FLASHOLDER. It's tiny, and entirely practical. And it takes M-2, No. 5 or No. 25 lamps with no adapter needed.

The necessary "juice" is generated by merely turning the generator knob about half a turn. Proceed, then, as you normally do when firing a flash. No need to hurry, either.

This amazing flash unit generates up to 50 volts. It is also going to generate a whale of a lot of excitement. And all for just $13.95 list.

But the unique generator feature is not the Kodak Generator Flasholder's only recommendation. The reflector folds down flush with the body of the flasholder. The result is a diminutive unit, so compact that it leaves room to spare even in a pint-sized gadget bag. Actually, the folded size is about 2⅞ x 3¼ x 1⅝.

On the back is a comprehensive flash guide that tells directly both *f*/ stops and EVS numbers. The rotating computer dial indicates correct exposure at a glance, for the little M-2 lamps or the larger No. 5 or 25 lamps.

Prices are list, include Federal Tax where applicable, and are subject to change without notice.

Kodak
TRADE MARK

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ONE ROLL OF
MOVIE FILM OR
KODACOLOR
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Simply send us your first order for developing and processing one or more rolls at our regular low price. To demonstrate our high quality, super color reproduction we'll rush back finished film to you and include a FREE PROCESSING CERTIFICATE . . . which you can use to have one roll of color film *processed without charge!* Or, you can apply your Free Processing Certificate as part or full payment toward any future order. We include special free mailer for your convenience, plus complete price list. Send cash, check or money order with your first roll. Satisfaction guaranteed. Send film with coupon now — or write for free mailer and helpful information. If you have no film for processing now — save this ad. Offer good for 90 days.

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8 exp. roll complete.....2.75
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KODACHROME MOVIE FILM

8 mm. Roll 1.25
8 mm. Mag. 1.00
16 mm. Roll 1.85
16 mm. Mag. 1.25
16 mm. Roll (100 feet) 3.25

35 mm. KODACHROME

Processed and Mounted
20 Exp.....1.15
36 Exp.....2.00

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FIFTH AVENUE COLOR LAB, INC.
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New York 36, N. Y.

Enclosed please find .....
(describe film)
and my full payment as per above price list. I must be completely delighted or I am entitled to full refund. With my order send me a FREE PROCESSING CERTIFICATE which I may use to have one roll of color film processed absolutely free, or apply as payment toward any future order.

Name.....

Address.....

City.....Zone.....

State.....

☐ Send Only Free Mailer

CAMERA CLUBS

by Whit Hillyer

The term "record shot" is familiar to all of you. It may have been applied to some of your own work by a judge or critic who thereby bruised your psyche grievously. It may have been used by you in a frank evaluation of one of your own prints. In any case, those two little words run up considerable mileage among amateur photographers. All of which brings me to inquire whether or not you've tried to define their meaning.

If you haven't, perhaps you should. If you have, chances are you've found yourself in the middle of an argument.

Jerome Koch, editor of *Sierra Camera Club's* "Gammagram," offered in a recent issue some comments which seem to me especially well thought out, and I'd like to pass some of his thinking along to you.

"Now that we have given official recognition to the record shot," he writes, "we find many of our members and some of our judges who are groping for a definition.

"There is no hard and fast line of demarcation between a record shot and a pictorial, so that we will find good pictorials in the record section and vice versa. No two judges will ever completely agree on where a record shot ends and a pictorial begins. Generally accepted, however, is the feeling that a record shot is a factual recording of a scene, a person, or a thing. A pictorial can be made with the same material, using a new approach, whether this approach be concerned with technique, lighting, viewpoint, or balance.

"Thus we agree that every picture is a record but not every record is a pictorial. The purpose of our record shot division is to give recognition and encouragement to our beginning members and to lure them through the back door into pictorial photography."

Sierra's "back-door" approach may have a weak spot insofar as teaching beginners pictorialism is concerned. In my experience the best way to teach people good photography is to point out shortcomings in their work and show them examples of what is good. At the same time I do want to give credit to *Sierra* for recognizing the need to encourage beginners, and for doing something tangible about it. I'll point out one thing, however: if this movement ever reaches the coddling stage (and I don't say it will) a lot of time will be wasted. The brutally frank judge or print critic may do harm, but those who persevere after he's racked them up generally come out of it as very fine picture-makers.

In any case, here is a start, at least, toward defining the record shot and its differentiation from the pictorial opus. I'll be sincerely interested in following the progress of this program in Sacramento.

Prints for Exchange

Norwalk Camera Club's pin-up and figure print exhibition is available to other camera clubs for showing and comments. Norwalk will comment on similar portfolios from other groups. Write to Albert B. Armstrong, Box 505, Norwalk, Calif.

Dallas Camera Club has assembled a group of prints for exchange showings with other clubs. Write to K. E. Berry, 3555 Woodleigh Court, Dallas, Tex.

Members of Lower Cape Fear Photographic Society, Wilmington, N. C., inspecting huge enlarger in photographic lab of Atlantic Coast Line Railroad, Wilmington. Left to right: Harry H. Tabb, v-p, M. E. Howell, E. C. Ballard, pres., J. Knight Davis, secy.-treas., Gene Robinson, Harold Abrams, Jack Thompson, Mr. Abrams' son (in jacket) and J. E. King.

We hear a recent shipment of 100 slides was sent to the VA slide project by members of *Delaware County Camera Club*, Upper Darby, Pa. Among the places shown in this unusually interesting collection were Brazil, Japan, Hawaii, and Cuba.

A foreign visitor inquired at the desk of the Boston YMCA about what to do over the weekend in a strange city. *YMCA Camera Club* program chairman Bill Potter overheard him, stepped up and invited him on the club's weekend field trip. Visitor turned out to be Constantine Kontos, an engineer from Athens, Greece, in America by invitation of the Department of Labor. "Connie" went along, saw rural New England, took pictures, and endeared himself to everybody.

Oklahoma Camera Club has arranged for 13 monthly exhibitions of members' prints in the corridors of Oklahoma Medical Research Foundation. Among the exhibitors will be some one-man and two-man shows. And not too long ago the "Daily Oklahoman" (Oklahoma City newspaper) had a fine writeup of the club and its value to the community. Club publicity chairman Jay Ryder and his colleagues are on the ball, and no mistake. And "Hypo Check" editor Mayme Bush continues to put out one of the most legible and most interestingly written club bulletins anywhere around.

Photographic Society of India's fine magazine "Click" is in its seventh year of publication and improves all the time. The full-color covers are especially interesting.

Definition culled from *Mashonaland Photographic Society's* "Rhodesian Picture Maker": Nude—a female who only planned to look at the etchings.—

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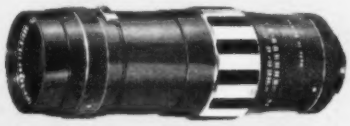

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5.5/200mm	99.50
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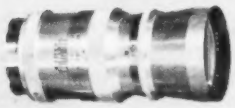

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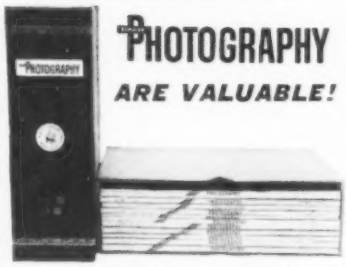

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Photo Show continued from page 38

lamps, 4-inch f/3.5 lenses, and push-button controls. Price, including one magazine, a zipper carrying case, and 20 wrap-around metal frames for cardboard-mounted slides, is $59.50 for a semi-automatic model and $79.50 for a fully-automatic deluxe model.

ELECTRONIC FLASH

Three transistorized speedlights were the outstanding news items in the electronics field at MPDFA. One, the two-and-one-half pound Heiland Futuramic (See *What's New*, May issue.) eliminates the separate power pack, operating from three D-size batteries (either photoflash, E-95 or rechargeable nickel-cadmium cells) or from a-c. The other two, the Ascorlight A422 and A423 Series 400 portables, represent the first production units to employ transistors in power packs producing 100 and 200 watt-second ratings. Longer battery life and shorter re-cycle times between flashes are the principal advantages obtained through more efficient transistor design. Both Ascors follow the same basic pattern offering outlets for two flash-heads, thyratron triggering, plug-in type flashtubes with interchangeable snap-on

reflectors, full and quarter-power switches (giving a two-stop difference between high and low), and a shutter synch-cord connection built into the power packs. The A422 100 watt-second unit with one flash-head retails for $139.50, the A423 200-watt-second unit for $196.50. A field test report on both of the Series 400 transistorized Ascorlights will be included in the July issue.

Another high-power portable introduced in Chicago for the first time was the Hico-Lite 496 which was reported on in *What's New*, April POPULAR PHOTOGRAPHY.

Two imported units which caught our eye were the West German Braun Hobby Special A.N.C., and the Japanese-produced Minicam 80. The new Braun unit operates from a self-contained nickel-cadmium battery said to deliver upward of 200 flashes on one charge, as well as on any a-c from 110 to 250 volts, and retains the well-known Hobby feature of a reversible reflector which gives a 50-degree beam in the standard position, 70 in the wide-angle setting. The 80-watt-sec rated Hobby Special A.N.C. lists for $119.50. Housed in an elegant gray plastic case, the Minicam 80 can be powered from 110-220 volt a-c, any type of expendable or rechargeable nickel-cadmium D-size batteries, or a spill-proof lead-acid storage battery. The unit also has a full and half-power switch, and is fused. A clever packaging feature is a spring-clip which secures the flash-head with its vulnerable face flat against the power-pack for convenience and safety in carrying. The 3½-pound Minicam 80 will sell for $59.95. Another unit by the same maker, the Minicam 40, is somewhat similar except that it operates at half the power rating of the Minicam 80 and is powered by a 240-volt dry battery. A 2¼-pound unit, the 40 will list for $42.95; Caprod Ltd. is importing the Minicam units.

NEW FILMS ANNOUNCED AT CHICAGO PHOTO SHOW

Six new films were introduced at the MPDFA convention, two color-negative materials, 3 motion picture reversal films, and a new Polaroid picture-in-a-minute print film, and anyone daring to draw a trend from this deserves to be prosecuted.

The color-negative materials, both Kodak products, are Kodacolor in 35-mm cassettes and Ektacolor Type L sheet film. Kodacolor, a universal color material balanced for daylight and artificial light, and rated at EI 32, was previously available only in roll sizes. Kodacolor 135 is scheduled for dealer delivery in early spring, and will be priced at $1.85 per roll. The film can be user-processed or returned to Kodak, and the price does not include processing charges. According to the manufacturer's release, Kodacolor 35-mm has a fine-grain structure and "excellent enlargements up to 11x14 inches can be obtained from sharp, well-exposed Kodacolor negatives."

Ektacolor Type L is a sheet-film color-negative material specifically designed for use with exposures ranging from 1/5 to 60 seconds, and will therefore complement Ektacolor Type S (for short exposures) which is intended for exposures only as long as 1/25 sec. Ektacolor L is rated at an Exposure Index of 16 for ASA-calibrated exposure meters, and a table of indexes for adjusting exposure times between 1/5 and 60 seconds will be packaged with each box as a means of combatting reciprocity failure. The film is balanced for 3200 K studio-type lamps, but may be used under a wide variety of tungsten-light sources with appropriate filtration. Ektacolor is processed by the user or independent labs, not by E-K. The pricing is the same as for Ektacolor Type S, and a box of 4x5 (10 sheets) sells for $8.09.

The new Polaroid film, an improved version of PolaPan 200, is described in *Miscellaneous*, below.

The introduction by Burleigh Brooks of three Perutz black-and-white motion picture reversal films in both 8- and 16-mm is especially significant to users of 8-mm equipment for whom black-and-white materials have not been available for some time. The three films are Perutz Perkine U-15 rated at 25 ASA, U-21 rated at 100, and U-27 at 400. All three Perkine films will be issued in standard double-8 spools priced at $2.85, processing included. The 16-mm Perkine films will be issued in 50- and 100-foot spools priced at $3.30 and $5.75 respectively, processing *not* included. At the user's option, the 16-mm

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Accessories: B.C. Flash Gun . . . Filter Safe, containing 4 filters . . . Mini-Enlarger, complete with f:3.5 – 25 mm Rokkor lens.

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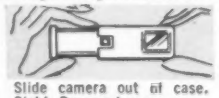
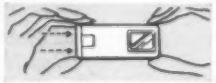
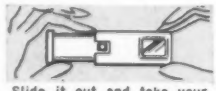


Slide camera out of case. Sight. Press release.



Slide camera back into case.



Slide it out and take your next picture.

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film may be sent to any processor or to Burleigh Brooks. The BB processing charge will be $3.95 for either one or two 50-foot spools, or for one 100-foot spool.

EXPOSURE METERS

Six new exposure meters ranging in price from $4.95 to $34.50, and aimed at everyone from the bewildered beginner to the experienced advanced amateur and professional photographer all attempt to achieve the same end: a direct-reading system in which the exposure is read off the meter dial rather than being obtained through the use of a supplementary calculator dial.

Simplest of all is the Walz P-1 ($9.95) designed for use with Polaroid cameras and calibrated in EV numbers only, with only one prior adjustment, setting the film's exposure index onto the meter, required before direct EV readings are obtained. The Sekonic Movie Pet ($4.95) requires two such prior settings, the exposure index and the frames-per-second exposure speed. At this point the meter takes over and reads directly in *f*-stops. In the same vein, though somewhat more versatile, is the Walz EV/LV simplified meter whose indicator dial is a rotating drum that has been engraved "Kodachrome, ASA 10; Kodacolor, ASA 25, Anscochrome and Ektachrome, ASA 32, Super Anscochrome, ASA 100, and Tri-X, ASA 200. With this $5.95 unit the photographer sets his meter dial to one specified for the film, or exposure index he's using, and there's his answer . . . in EV/LV numbers.

A somewhat more ambitious attempt to combine simplicity of operation with sufficient versatility is found in the Weston DR (direct reading) meter which employs a wider range of exposure indexes (from 8 to 250) to provide direct readings either in EV numbers or in terms of *f*-stops for a specific shutter speed (or a movie camera frame speed). In any event, the result is much the same: A meter which one merely points and reads without further interpolation. One interesting constructional detail of this $18.95 meter is the semicircular mask which obtains various film-speed indexes by covering up, or exposing, various portions of the light-sensitive cell.

The Norwood Super Director is the result of a joint effort between Capt. Don Norwood, the original incident-light meter man, who designed it in his Pasadena, Calif., laboratory and the Walz company who manufacture it to Norwood specifications in their Tokyo works. Considerably smaller, somewhat rounder and less streamlined than the original pocket-sized Norwood Director, the new meter embodies the basic Norwood idea of a three-dimensional hemisphere incident-light collector mounted on a base that swivels horizontally in all directions. The big new feature—or maybe we should say little new feature because it's really quite small—is a new variable aperture slide, called the Light Valve, with six graduated apertures. In the original Norwood meters, a different direct-reading slide was required for each exposure-index and shutter-speed combination. The instruction manual supplied with the new Super Director lists 18 different exposure-index and shutter-speed combinations obtainable with the six-position light valve, and indicates that the total possible number of different combinations is almost infinite. Despite the obviously considerable effort that has gone into making this a fairly universal direct-reading instrument, two calculator dials are supplied for them as wants 'em: one in the conventional place on the meter, the second inside the leather carrying case. The Walz Norwood Super Director lists for $19.95.

The new General Electric Golden Crown PR-3 is an improved version of the PR-2 with improved readability at the low end of the scale, an additional internal gear which limits any dial slippage to a maximum error of only 1/6 of a stop, with superior scales, dot-markings and so forth. The PR-3 also is said to be somewhat

more sensitive than its predecessor, and according to a technical specification sheet distributed at the show, the Dynacell light-booster attachment "provides four times greater reflected-light sensitivity for the Golden Crown than for any other G-E meter." In operation, the PR meter series employ a definite form of direct-reading. Prior to taking the measurement the photographer sets his film-speed index on one dial and his shutter-speed on another. To make the reading a button is pressed to release the indicator needle and then released to lock the needle in place, and opposite this resting place is the required *f*-stop. The PR-3 can also be set for direct reading in EV numbers when desired.

TAPE RECORDERS

The growing interest in stereophonic tape is evidenced by two new recorders. Bell & Howell brought forth a 771 Stereotone portable stereophonic tape machine with twin 5¼-inch speakers plus an 8-inch companion speaker. The 771 handles 7-inch reels, has push-button controls, plays and records stereophonic or monaural tape at 3¾ and 7½ IPS, and features a fast—1,200 feet in 80 seconds—forward and rewind speed. The price is $199.95. The companion speaker is a self-contained unit with its own power supply, pre-amplifier circuit, and main amplifier, which can be used to amplify radios, phonographs, AM or FM tuners, or as a

5-watt public address system. It is priced at $99.95.

Wollensak's lightweight T-1500 now also is available as the T-1515 with a built-in pre-amplifier for stereophonic play. Two sound systems are included, one for monaural playing and recording, the other for connection with the input of a radio, hi-fi, or television when stereophonic tape is used. Size, weight, and operating features are identical with the T-1500. Price, including microphone, 2 reels, and cord, is $229.50.

NEW DARKROOM EQUIPMENT

Despite the heavy emphasis upon cameras and related picture-taking accessories, a number of novel darkroom items were introduced. Publicly exhibited for the first time was the Simmon Omega Tricolor Computer for making high-quality Type C color prints from Eastman negative-color materials. The new device, which will retail for an estimated $2,000, relates such things as negative size and density, color balance and color temperature automatically by means of an electronic computer mechanism. After a small test-print is made this computer actuates three color filters (red, green and blue) in a correctly timed sequence of exposures. Designed primarily for the Simmon Omega D-2, and Automega D-3 and E-5 enlarger models, the Tricolor Computer is also adaptable to many other enlargers.

Another piece of equipment primarily of interest to makers of Type C prints, but which will also find probable application in standard b-&-w printing is the Saunders Automatic Colorprint Easel which permits a series of successive test exposures to be automatically positioned on a sheet of 8x10 paper in total darkness. By means of horizontal and vertical click-stop adjustors the user can produce any of the following series of test-exposures or prints on his 8x10 sheet: two 5x7; four 4x5; four 3½x5; or eight 2½x3½.

New enlargers introduced included the Durst 606 which combines the functions of enlarging and copy-making with negatives up to 2¼x3¼ by means of a removable mirror unit which is used in one position to reflect light from the projection-lamp through the lens for enlarging, or placed in the reversed position to reflect an image from the baseboard up through the lens and onto a groundglass viewing screen for focusing and framing copy work. The new Minox III enlarger incorporates two features not found in previous models: a flick-in diffusing disk controlled by a small lever and a tilt-back lamphouse which now permits ready access to the condensers. Equipped with a 15-mm f/3.5 Micro Minox lens, the Model III Minox enlarger will sell for $189.50. Agfa introduced the new Variscop 60 for b & w and color negatives up to 2¼x3¼ with automatic focusing priced at $537. Accessories include the Agfa colorhead which provides built-in filters with density selection by means of three calibrated dials. Also shown was the Variomat C, an enlarging easel which electronically measures the quantity of light projected through the enlarging paper and auto-

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Minolta "A". Same as "A2" except 4-element, f:3.5 Rokkor coated and color corrected lens; shutter speeds to 1/300; no self-timer or Lumi-Frame ..... $49.95. (case extra)

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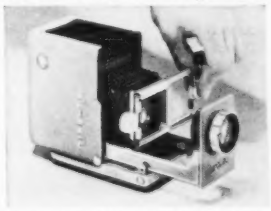

Compact, portable, light-weight unit. Casts unusually brilliant on-screen images with its short focal-length and fast 75 mm. Rokkor, f:2.5 lens. Price includes bulb, 35 mm slide carrier, adapter for Airequipt changer, and carrying case. $37.50

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matically controls the enlarger exposure. The Agfacolor-Mat, an automatic electronically controlled set-up for tri-color printing of Agfacolor color negatives (but which is readily adaptable to Type C) is an integrated unit consisting of the Variscop auto-focus enlarger with Agfa Colorhead, the Agfa Variomat V electronic computer easel and a push-button computer panel for mass production of quality color prints.

The FR corporation has announced the re-packaging of its line of liquid chemicals in flexible plastic bottles which can be squeezed to expel excess air which

would otherwise lead to oxidation spoilage. The new "plia-bottles" will be available only in quart sizes, and will continue to have the ounce gradations used on previous FR glass bottles.

A new series of Yankee developing trays and deep fixing-bath tanks are made of white high-impact styrene plastic and feature a hose-type exhaust which clips to the tray so that the tube-end is pinched closed when in use. Tray sizes range from 14x17 to 23x28 (in 5 sizes) and the hypo tanks are 11x16x5, 16x20x6, and 20x24x6. Aside from emptying easily, the new Yankee lab-ware is lightweight, has a smooth white surface for easy cleaning, and is said to be dent-proof, chip-proof, and practically unbreakable.

General Electric released a new 6½-inch long pencil-shaped "stick" lamp which, company officials announced, will reduce the size of photographic equipment such as enlargers, printers, copy devices, and opaque projectors. Encased in a clear-glass tube, the stick-lamps operate on 110-volts and draw 100 watts. Because of their increased brightness, it was stated, print exposure times will be materially reduced.

A new Nikkor reel for 16-mm sub miniature film (perforated or unperforated) was exhibited for the first time. The new reels have a one-sided spiral and are extremely easy to load with the film clipped to the center and the reel rotated on a flat surface with the spiral side down as film is fed in. The 16-mm reel will hold up to 39 inches of film and will sell for $5.95 each. Also shown was a special 18½-foot capacity Nikkor reel for 35-mm film intended for simultaneous processing of up to three 36-exposure loads in professional-type film tanks. Designed primarily to conserve solution, the new reels will sell for $24.95.

A new liquid film drier permits negatives to dry completely in a matter of seconds after exposure to the air under normal room temperature conditions. The product, D-Vel-O Instant Film Dryer, requires only a two-minute immersion of the negative after which it is squeegeed (or sponged) on both sides to remove excess moisture. The highly volatile non-inflammable solution acts simultaneously as an additional hardening bath, and obtains its instant drying action by squeezing out water molecules which are replaced by those of the rapid-evaporating Instant Dryer solution. Available in quart bottles priced at $3.95, and $11.50 gallon jugs, D-Vel-O Instant Dryer is reusable. A field-test report will be included in a forthcoming issue.

MISCELLANEOUS ITEMS

Roloc Inc. has introduced a 30x36-inch negative and transparency viewer with a viewing area of 25x34 inches. Only four inches deep, this new Rolite lends itself to wall or table mounting or may be used at a horizontal or vertical angle of 15 degrees. The Rolite lists for $69.95, has an even cold-light illumination system and may be obtained with a set of short legs for $3.50 additional, or with 28-inch table-height legs for an extra $8.95.

Voss Photo Corporation has announced a new budget priced zoom lens for 8-mm cameras. Called the Nominar, it is an autofocus unit zooming from a ½ to 1½ inch effective focal length, and will sell for $99.50. A wide-angle converter and viewfinder correcter are available.

Graflex Inc. unveiled its new 4x5 Super Graphic camera (See *What's New*, May 1958 issue) and announced a new low-priced 4x5 outfit, catalog number CF-904. This includes the Pacemaker Crown Graphic "45" camera with interchangeable-cam rangefinder mounted on top to accommodate a variety of lens focal lengths, built-in Rangelite for night-time focusing, and West German Schneider Xenar 135-mm *f*/4.7 lens in Compur Shutter. Priced at $235, the CF-904 outfit is approximately $80 less expensive than previously available Graflex Optar lens combinations. At the same time the company announced that "23," (2¼x3¼) Century, Crown and Speed Graphic cameras will be issued with *f*/3.5 and *f*/4.5 Schneider Xenar 105-mm lenses in Compur Rapid MX shutters. The Century "23" will sell for $169.95 with the *f*/4.5 lens, $187.95 with the *f*/3.5. The Speed Graphic "23" will be $257.45 with the *f*/4.5, $275.45 with *f*/3.5 lens. Pricing on the Crown Graphic "23" has not yet been determined.

A new series of Harrison & Harrison adapter rings employ a unique new system in which the threaded ends have been cut into segments so that they may be used either as screw-in or as push-on attachments. The new double-purpose rings will be available in a tremendous variety of inner (and outer) diameters to accommodate practically every lens accepting filters from Series V through Series VIII.

New Robot camera accessories include a 200-mm monocular finder (half a small prism-type binocular) with a parallax

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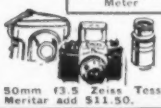

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clip-on groundglass focuser which attaches to the Robot accessory shoe with the screen held flat against the film gate by spring pressure. Priced at $14.95 the new device will be useful in critical focusing for copy work, setting up cameras for remote operation, as well as for checking lens-and-rangefinder performance.

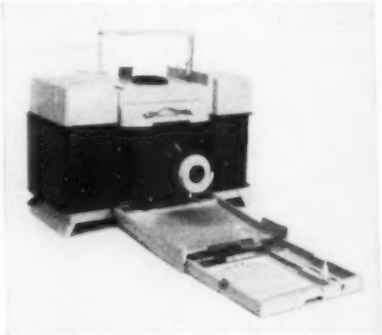
Shown for the first time at any U. S. photo show was the Photokina (1956) introduced Möller Cam Binox which combines a pair of quality 7x35 prism binoculars with a sub-miniature camera. The camera makes 10x14-mm negatives on 16-mm unperforated film, has a 90-mm *f*/3.5 lens and a metal focal plane shutter with speeds from $\frac{1}{30}$ to $\frac{1}{800}$ sec., lists for $450.

The Smith-Victor Company introduced the Tote 'Em Pole, a $12.50 monopod in anodized black aluminum with a tilt-top which extends and locks at heights up to 65 inches off the ground. Legs lock and unlock automatically with slight downward (or upward for retracting) thrust.

Kilfitt introduced their new 15½ ounce Grip-Pod, a shoulder brace that is used like a rifle-stock to support any camera and/or lens having either a European or American tripod bushing. A number of adjustments accommodate individual body-measurements, and the attached cable-release is used in a trigger-like manner. The Grip-Pod lists for $24.95; an auxiliary leather sling is $4.95, and an extension unit for reflex housings is $2.95.

An extremely interesting last-minute arrival in the 8-mm field is the Elmo 8 RT, an electric-motor-drive camera powered by 4 pen-light cells which purrs along at an unvarying 16 frames per second. The new Elmo, which will not be immediately available, and for which no price information could be obtained, will have a turret accepting three prime lenses, not converters. The camera was exhibited in Chicago with two Zunow *f*/1.1 lenses, a 13-mm normal focus and a 38-mm long-focus, the idea being to leave the selection of the third lens to the customer's option. A built-in zoom-type finder accommodates focal lengths from 6.5- to 38-mm.

Two new picture-in-a-minute products, a device for copying Polaroid prints, and an improved panchromatic print film were introduced to the trade at the Chicago show. The Polaroid Print Copier is



a $29.95 unit which attaches to the front of a Polaroid Land camera and provides a fixed-focus lens, enclosed print-easel, self-contained glare-proof polarized light source and electrical seconds timer for simple on-the-spot duplication of Polaroid prints. Housed in lightweight gray-and-black plastic, models are available to fit all existing Polaroid Land cameras. The new panchromatic print film is an improved version of PolaPan 200 (Type 42 and 32) print film with increased resolution, longer-scale gradation, richer blacks and more brilliant whites. Said to produce prints "twice as sharp as before," the new film is rated at an exposure index of 200 in daylight and 140 in tungsten light (for ASA calibrated meters), and combines most of the desirable characteristics previously available in the discontinued Professional Pan (Type 43) film. The improved PolaPan will retail for $1.98 per 8-exposure roll, the same price as the existing material. A special report on both of these new Polaroid items will be contained in the July issue.—▶

When It's Hot Outside

continued from page 89

alter with temperature. Formulas containing hydroquinone will produce fog unless restrainers have been added. Most of the familiar formulas produce greater contrast even when the development times have been compensated for the rise in temperature.

Many of the newer prepared developers have *thermostable* properties; that is, they maintain contrast and density without appreciably greater fog over a much wider range of temperatures (see chart) than the older formulas. Even with these "panthermic" solutions, however, there will usually be some increase of contrast at the upper range of developing temperatures. It is possible to turn this characteristic to advantage and to raise the temperature of these formulas deliberately when you need more negative contrast with flatly lighted subjects.

When the wash water is running at 68-80 F, you will get good results with almost any of the standard formulas which do not contain a strong alkali to activate the developing agent. Beyond about 75 F, you will need to work very carefully for the emulsion will be tender and subject to mechanical damage (fingers are dangerous—particularly in development by inspection) as well as to the danger of blisters if the negative is suddenly plunged from an alkaline to an acid bath.

When there are no special directions for high temperature work with your developer, here is a suggested procedure *which you should first test with a trial roll* to be sure of your individual working conditions:

Use the wash water as a water jacket to bring all solutions to exactly the same temperature.

Following development, rinse the film in plain water for 30 seconds, then use a stop bath (1½ oz of 28 per cent acetic acid to a quart of water).

Use one of the rapid (ammonium thiosulfate) fixers. A fresh solution will give maximum action in minimum time. Several of these do not have a hardening action on the emulsion. In hot weather,

add the special hardening solution provided by the manufacturer.

Follow this with a brief (one or two minute) rinse and a hypo-removal bath (several such products are on the market), then wash for five minutes.

Immerse in a wetting agent for no longer than 30 sec (prolonged immersion will soften the emulsion), then dry without the application of any additional heat but preferably in a slight breeze from a fan. Be careful of dust which will imbed itself in the softened emulsion.

If you are not using one of the thermostable prepared developers listed in the chart, most of which have special directions for use at higher temperatures (see additional remarks in chart), your exact development times may have to be decided by trial. Try about 80 percent of the recommended time at 68 F at 75 F, about 65 percent of the time at 80 F, or consult the time-temperature graphs published by most film manufacturers for their films and developers.

When your wash water is running above 80 F, you may still get good quality negatives up through at least 90 F by increasing your precautions against chemical and mechanical damage to the emulsion.

Many regular developing formulas and some of the proprietary ones can be altered by adding anhydrous sodium sulfate (*not* sulfite) to the developer. The exact amount recommended by various manufacturers differs slightly but if you do not have directions at hand, try adding about 2½ oz per quart of solution. Be sure that it is the anhydrous (desiccated) form of the sulfate you are using. The more easily available hydrated form (Glauber's Salt) may be substituted, but 2¼ times the amount will be required. The salt, in this form, will dilute the developer somewhat and change its characteristics.

In the anhydrous form, sodium sulfate will only inhibit the swelling of the gelatin, preserving some of its mechanical strength and incidentally slowing down the developer action somewhat so that the timing does not become so critical.

In fact, with the addition of the proper amount of sulfate, the time at 80 F will be about the recommended time at 68 F for the untreated developer. At 85 F, cut back the developing time to about 75 percent and at 90 F to about 50 percent when you test your setup for this high-temperature work.

Sodium bisulfite is sometimes used instead of sodium sulfate (see directions in chart for Ethol UFG). You could even use sugar in an emergency!

It may be necessary to substitute a hardener for the usual rinse and/or stop bath before fixing. The most suitable formula for this is:

1 oz potassium chrome alum (30 grams)
2 oz sodium sulfate (desiccated) (60 grams)
32 oz water (1 liter)

The film should go directly from developer into this hardener; agitate for 30 seconds and let it remain in the bath for a total of 3 minutes. Discard the bath as soon as it changes from a violet color

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to a yellow-green and mix fresh each day.

The trouble with this hardener is the danger that it will leave a scum on the film. Just before removing the film from wash water, gently rub the surface (under water) with a wad of absorbent cotton. Needless to say, this is somewhat delicate and it may be better to substitute for the chrome alum a stop bath consisting of 1½ oz 28 percent acetic acid plus 3 oz sodium sulfate per qt of water.

The other procedures are the same as for developing at 68-80 F.

Printing when the wash water is running warm will not ordinarily cause as much trouble as film developing. However, the same care should be taken to keep all processing (the period when the emulsion is wet) to as short a time as possible and to harden the paper well, particularly if it is to be ferrotyped. Use only fresh fixing baths. It is desirable to use a hypo remover and to wash for only about 15 minutes.

Color films cannot be successfully developed (at least in the usual amateur or professional darkroom) at temperatures higher than those recommended by the manufacturers (wash at 75 F for Anscochrome, 77 F for Ektachrome, Process E-2). When it is difficult to have color films processed by a finisher who has temperature control, or inadvisable to hold exposed color film for a few days at a temperature cold enough to arrest any strong color shifts, the image may be preserved by partial processing.

Anscochrome may be given only first development, stop bath, and wash (in several trays of water brought down to the correct working temperature, if necessary), then dried and held for the subsequent steps. Ektachrome may be given first development and wash, then hardened for 3 minutes, bathed in a 1 percent acetic acid solution for about a minute and dried. Wrap partially processed film carefully to protect it from damage and from strong light.

This can be a valuable emergency procedure, but it should normally be used only when you are working with a batch of color film of the same emulsion number. With any batch, there is apt to be a slight color shift. Make a test first, and if, for example, there is a slight over or under shift in magenta, use one of the light CC filters when exposing to correct for this ahead of time. The color shift resulting from partial processing will be consistent within any one emulsion number as long as the film is in date and properly handled and stored.

Most of these extreme measures for controlling the response of film may not be necessary for many readers. However, throughout the continental United States, at least where there is a municipal water supply, the processing temperatures are apt to rise beyond the optimum 68-70 F during all the summer months. If you remain aware that heat and humidity are the natural enemies of film before development and take reasonable care of the film in your possession, and if you exercise the necessary minimum of attention to the fragility of film when it is wet, your results will be satisfactory the year around.—

Illustrations by
MARION THEUER

PHOTO VACATION HANDBOOK

Clip this special section and tuck it in your gadget bag for quick reference, and better pictures all summer long

INTRODUCTION

This summer you will be traveling someplace—up state, cross country, abroad, to the lake, the beach, and maybe around the world. Whether it's a vacation or a weekend trip, you will be looking forward to enjoying yourself. Here's where your camera comes in. A still picture or a motion picture can catch delightful moments that you can take back home, see again, show someone, or use to help you to remember.

But let's face it, your camera isn't going on vacation, you are. Your camera's important but it should be secondary. It should be as easy for you to use as your fountain pen when you're writing down the name of someone you've met in your traveling. We have dedicated this Photo Vacation Handbook to making photography as easy as possible. We have tried to list all the tips that will insure your getting the most out of every exposure.

We hope that this special summer section will help you whether you are traveling 8 or 8,000 miles.

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COLLECT PEOPLE

When you travel this summer, what's your photographic ratio going to be between people and scenic pictures? Too often it's on the side of places and things and the human element is left out. Before you pack your bags, make up your mind to bring back a set of *people pictures* from your vacation. People give a place its character and they also play a large part in *your* impression of an area.

There are many ways you might go about getting a collection of *people* in your travels. You might want to specialize in children or in people wearing native dress, not only in Europe, but our own country as well. There's Lancaster County, Pennsylvania, where most of our Amish population is, and there's the Southwest—Indians, cowboys, Spanish-Americans—to name just two of our more colorful areas. You can go deeper into this too—think how differently people in the city dress from people in the country, how certain parts of the country typically favor a particular mode of dress rather than another, even how people of different interests and occupations within a city or town dress. Keep your eyes open!

You might also try to get a sequence of pictures of people you think have a "typical" quality about them. The small town druggist, the Greenwich Village artist, the English gentleman—everyone has their mental images of types; when you travel, take their pictures. You can also keep a photographic record of the friends you make in your travels.

No matter where you go, you have an opportunity for fresh seeing and picture taking. You're seeing new faces, so look at them. Try photographing faces that interest you whether they're typical of anything or not. You're bound to be pleased by such a set of pictures as they will often recall more of the pleasures of your journey than your more planned shots.

The actual shooting of strangers can be ticklish if you aren't using a telephoto lens and want natural looking, unposed pictures. Don't hesitate—be decisive and fast when you shoot. If your subject sees you, a friendly "thank you" ought to suffice. In situations where it wouldn't be ruinous to an exciting picture, be polite and ask before you shoot. Most strangers will be flattered that you want to take their picture and cooperate by posing for you. Have them doing something, not just smiling at the camera. While you're at it, get model releases—you may have some saleable pictures. —

APPROACHES FOR THE VACATIONING PHOTOGRAPHER

You're approaching your vacation this year in one of two ways: (1) you've only got two weeks, and there's more to see and do than you'll ever have time for, so you must make every minute count; or (2) vacation is a time for rest and relaxation, for fishing and walking and just sitting in the sun. Both of these approaches will affect the kind of pictures you will take on your vacation, and the way you'll be making them.

If you're planning to operate on a jam-packed schedule, with stand-up lunches and tight plane connections, you will need to plan your picture taking accordingly—and well in advance. First of all, reduce your equipment to an absolute minimum; otherwise you will be tempted to jettison all of it whenever the pace gets too fast. Maybe you can limit yourself to only what your pockets will hold (plus the camera, of course)—a filter and a couple of extra rolls of film. At most, carry a handbag-size gadget which will add nothing to the bulk of your total luggage. Often a full-sized camera bag will mean the difference between waiting for a porter (and paying him) and being self-sufficient.

Lay out your itinerary, and alongside it a note pad for the photographic possibilities at every point. This will not be easy if you're visiting places for the first time, but perhaps a much-traveled friend can help. Concentrate on the uncommon subject matter; avoid the postcard cliche. Look for breathers in your schedule, however short, which will enable you to do little picture stories, or to gain a little understanding of your subject matter so your camera can see deeper into it. For instance, an hour's wait at Shannon airport is time enough for a documentation of the rush and tension of the big international terminal as revealed in the faces of other travelers.

Plan your film needs so that you will neither overburden yourself with an excess or waste time looking for the kind you want in an unfamiliar city. If possible, have your camera checked by an expert before you leave, to reduce the likelihood of a breakdown or malfunction.

There's one way you can actually make your rush schedule work for you. Think of the photographic part of your vacation as a story in itself; make it photojournalistic. Call it *Two Weeks Around Europe*, or *Through the Mediterranean in High Gear*, or something descriptive of your particular travel plan. Let it show how a tourist-in-a-hurry gets the most out of his travel mile and travel dollar. Perhaps, if it happens to strike you that way, you could make the whole thing a satire or parody. It could heighten the fun you have while you are away and make the vacation even more pleasurable and valuable in retrospect.

Now let's suppose you're the man with plenty of time. You've had your fill of on-the-go vacations, and you want to spend all your time on a cruise, or in a single resort or hideaway. Your camera belongs with you, of course. You're even better prepared to make a memorable set of pictures than your friend who's trying to see the world on a weekend. You know your subject—or at least you'll have time to get to know it before you start zipping film through your camera.

Is it a hunting camp in the North Woods? A ranch in New Mexico? A fashionable spot on the Italian Riviera? A strip of beach on the Cape? In any of them your approach is about the same. If you've been there before, plan in advance the pictures you want. You're going to be as comfortable as an old shoe, and you won't have any apprehensions about ways to approach your subject. Try writing a full shooting script now, while you're making advance vacation plans, covering either a leisurely and complete picture story about the place itself or an intense camera exploration of an aspect or detail within it. Make it a man's-magazine story, or a social comedy, or a sand-between-the-toes human-interest piece.

Allow yourself greater latitude in choosing equipment and accessories to take along. No need to decide which camera; take them both—or all. There should be a full complement of extra lenses, filters, extension tubes, and gadgets that can extend your picture potential. You will be thinking of ways in which you can make this year's vacation pictures not only better but fresher and more original, and you won't want to lack the one accessory that might help you most.

As for film, if you won't be able to pick up what you need on a daily shopping trip, take a whole vacation supply with you; you can store it in a cool place, and you'll be glad to shed this additional worry. Instead of standardizing, as the man-on-the-go should, you can take supplies of two or three black-and-white films and as many for color. If your vacation is extended, take along a film tank and some prepared chemicals, and even a printing frame and trays. There will inevitably be a rainy weekend or an otherwise wasted evening when you could do some on-the-spot processing. It will help you see how your picture-taking is going, and what weak spots need to be built up for the kind of record you want.

No matter how much time you have this summer, or whether you will spend it whizzing about the world or resting like a frog on a log, your camera will be with you. Let it do its best to help you have a good time; plan now for the pictures you want, and resolve to get them.—▶

THE PHOTOGRAPHER ABROAD

Nearly nine million Americans, by the best available estimates, will head out over the borders this year to see the world, or some small part of it. Nearly that number of cameras will go with them—perhaps more, for who has ever seen an American tourist without at least one camera?

If you are one of this happy horde, you will find useful information here about customs regulations, films to use abroad and suggestions on several problems which we hope you never encounter. Many of the facts are summarized in the accompanying charts.

The average tourist, who carries a simple camera and packs a few rolls of film may "do" Europe in a breathless once-over lightly then return home without realizing that there are ever any difficulties at borders. The more ambitious amateur, who uses several cameras and takes what he regards as a no more than adequate supply of film to cover expected picture-making opportunities, might run into small snarls of red tape at intervals during his trip.

More often than not, rules are read in favor of the American traveler whose dollars are welcome to the economy of every country. But the rules are applied by individual human beings playing their role as their country's doorkeepers and limited by their own experience. It is possible (although the chances of its occurring to you are remote) to encounter a customs inspector who regards three rolls of film as a quite "reasonable" supply for a two-week visit; he may not use that much film in a year, if he has a camera at all!

Courtesy and cooperation (which some American tourists forget to bring along, to the annoyance of the others) go a long way toward solving such misunderstandings. You will probably want to shoot more film than you can bring in, anyway, and you can usually replenish your supply—unless other American tourists have temporarily cleaned out the stocks. Kodak films (made in U. S., Canada, France, and England) may be found almost anywhere for which a passport is valid. Anscochrome sources are increasing in number and distribution. The Polaroid Land film carton is also now in evidence in several areas.

If the labels on the films displayed in the countries you visit are strange to you, pick any of the brands listed elsewhere in this section. The films listed should give you satisfactory results, although you may find the color rendition of some of them different from that of American films.

On these pages are some suggestions for things to do before you go, precautions to prevent trouble and annoyance. Even if you should run into a trifle of this, your photos will remind you of the enjoyment which travel brings.—▶

SHOOTING ON THE RUN

TRAINS

The emphasis in train construction in recent years has been on cars with vastly increased visibility, like the vista dome or glass-roofed observation car, giving passengers an almost unlimited view of the scenery. This has been a boon to the photographer who likes to take pictures while traveling on trains. And since the rails frequently lead through some breathtakingly beautiful views, the picture possibilities are outstanding.

But there are several important things to remember in taking train pictures if you want more than just a blurred, out-of-focus landscape or a picture superimposed with window reflections.

One of the first considerations is the choice of shutter speed. This usually depends upon the angle of your camera to the direction of your subject. For example, if you're shooting out a side window and the subject is directly in front of you (hence at a right angle to you), you may have to use a speed of 1/250 second or higher for objects that are from 100-200 feet away. Of course if the object is far distant, a speed of 1/100 will probably do.

Consider too the speed of your train. When it is whizzing along and you want to shoot a picture, your shutter speed has to be much higher than it would be if the train were slowly pulling into a station stop.

Train speed is less important when you are shooting pictures directly ahead of you. Usually 1/25 second will be all right for distant objects provided there's not much train motion, but 1/50 will give you greater security, and you'll have to move to 1/100 for nearby objects. Don't forget that the train's vibrations can cause camera movement and blurred pictures when your shutter speed is very slow.

For most pictures, you can focus on infinity and count on getting them sharp. Keeping your shutter speed fairly constant, your aperture will depend upon the scene and the type of film you use. But if you're focused at infinity, your depth of field is good even at the widest lens openings. So the use of slow-speed films is not a handicap, particularly when you're working with a lot of daylight.

A light meter is a big help, and for train shooting you have to use one that measures reflected light. And since you're usually shooting through a window, this can change your setting from one-half to two stops. A color-correcting filter is helpful, especially when the window glass is tinted. If you use a filter, remember to adjust your exposure according to the filter factor of the one you use.

Naturally the distance between you and the subject can't be changed physically, but you can alter it by using interchangeable lenses. You can "back up" with wide-angle lenses and "move in" with long-focus or telephoto lenses.

A moving train will present your picture for only a moment or two, so you have to make quick decisions or else miss the picture. A valuable technique is to point the camera to a distant part of the picture, keep your eye on the foreground coming up, make your decision, and shoot when the picture is framed in your viewfinder. In some ways it's like shooting sports action, so often you can follow it best with an open-type or wire viewfinder that gives an unobstructed and larger-size view than most optical viewfinders.

Telephone poles also have a habit of wandering into pictures. When there's a long string of them, develop a cadence-count so that you'll have an idea of when one is coming alongside. Start with a pole and count "One-space, two-space, etc." Repeat the figure as the pole is in the picture and then do your shooting on the word "space" as the pole passes by.

Train windows also give problems in reflections which you usually want to avoid in your pictures. You can do this by keeping your camera as close to the glass as possible (without actually touching it and picking up all the train's vibrations) and cupping your hands around the lens hood to help keep out any stray ones.

By American standards, many European trains will seem old-fashioned, but their travelers have a picture-taking advantage because the windows can be opened and frequently are in the warmer weather. This means a chance to take pictures unhampered by windows.

Don't overlook the possibilities this offers for pictures during train stops, especially at small villages with their colorful vendors. Stops also give you a chance to shoot good pictures of your fellow passengers and officials such as the conductor. Although it is frequently like shooting in the shade, the lack of motion permits you to use a slower shutter speed and thus get a good exposure.

You'll soon find that an amazing variety of pictures is possible from a train window, and more important, you'll have a good way of preserving those trip memories of which train rides play such an important part.

DO . . .

1 Consider the speed of your train and the angle of the subject to your camera (pictures at right angles to you move the fastest) when picking your shutter speed.

2 Protect yourself against blur caused by the speed at which you're moving or the train's vibrations by using the fastest shutter speed possible.

3 Increase your exposure when shooting through color-tinted windows and ordinary dirt. And if you use a filter, adjust your exposure to it.

4 Make fast decisions, because the train won't back up for you to get the picture you missed by thinking too long about it.

5 Keep your camera close to the window and cup your hands around the lens hood to avoid reflections.

DON'T . . .

1 Press your camera lens against the glass. You'll pick up all the train's vibrations.

2 Shoot at shutter speeds below 1/25 second unless the train is standing still.

3 Overlook the possibility of getting good, off-beat pictures *inside* the train of your fellow-passengers, train officials, vendors, etc.

4 Ignore the telephone poles that have a habit of creeping into pictures. Develop a count that will let you know when one is approaching so that you can avoid shooting it.

BUSES

Unlike trains which make relatively few stops, a bus trip usually involves frequent stops for passengers to get out and stretch their legs—and also to take pictures. Shots of the baggage being loaded, different passengers getting on or off, close-ups inside the bus—all are good possibilities when the bus is stopped.

But if you want to take pictures while you're moving, some of the same rules apply to those for taking pictures on trains. Once again you have to think of the angle of your subject in relation to you and the speed at which you're moving. If your subject is also moving, that too will make a difference in the shutter speed you use.

Also take note of the bus' vibrations, which often depend upon the condition of the roads you're traveling along. It could be greater than the vibrations of an airplane, so if you're making a picture while the bus is moving, use a shutter speed of at least 1/100 second. If you're film is fast enough and there's sufficient light, you're safer shooting at 1/200 and higher.

On some buses the windows may be opened, but if the bus is air-conditioned, you have to shoot through the window glass. This means problems like dirt, tinted glass, and reflections. But since buses do make more stops, you can sometimes clean the outside of your window or have it done for you. If you can open the window and shoot, without causing discomfort to the other passengers, one of your chief troubles disappears.

Many larger buses which make trans-continental trips also have vista dome arrangements which give you an excellent view. One caution: never shoot through a curved section of the glass, for this will give you distortion in your pictures.

With bus travel gaining in popularity, especially since the development of an almost unbroken link of turnpikes, your trip by bus offers another excellent chance to get pictures on the run.

DO . . .

1 Consider the vibrations of the bus when setting your shutter speed. Try to shoot at 1/100 second and higher if you can.

2 Open your window and shoot without the glass obstructing you, if you can do so without discomforting your fellow passengers.

3 Clean the outside of your bus window or have it done, especially if the window is very dirty or streaked.

DON'T . . .

1 Forget that if both you and your subject are moving, the "effective" speed is doubled

and your shutter speed must be proportionately faster.

2 Neglect to compensate for tinted glass when making your exposure—and also to consider the color of the tint when shooting with color film.

3 Shoot your pictures through a curved section of the glass if your bus is the vista dome type or has curved windows.

AUTOMOBILES

One of the virtues of car travel is that you can stop almost any time you wish, get out of your car, and then take all the time you want to get a picture. You can park, walk up close to your subject, pose people, and generally control your photographic procedure.

But if you like to take pictures while in motion, and many people do, the same principles involved in shooting from a moving train or bus apply. The most important consideration is shutter speed, which in cars is usually determined by the angle of the object you want to photograph and your car speed. Vibrations are not so important in selecting shutter speed, for most cars ride smoothly on good roads. The high shutter speeds of train and bus shooting are not so imperative.

One type of car picture that's popular involves other factors. This is the one that shows it was taken from a car—a part of the windshield and dash frames a corner of the picture. To include an object so close and also get your general scene in focus means stopping down your aperture so that you have extreme depth of field. This also means shooting at a much slower than ordinary shutter speed.

The mere act of stopping the car to get pictures also brings up several important safety precautions. Remember that you can't stop abruptly on a busy highway or turnpike without causing consternation in the line of cars behind you. Don't dawdle along a busy road looking for good picture possibilities, oblivious to the other motorists. When you do this, you're not only a nuisance—you're a highway menace. If you decide you want to stop, signal appropriately well ahead of time and then pull off the highway as far as possible, not just onto the road's shoulder.

It should be obvious, but don't try to drive and take pictures at the same time. And if you're taking pictures, remember that the driver is also occupied with something much more important—keeping the car safely on the road. Don't annoy him or unduly distract his attention with your picture-taking.

Ordinarily you can roll down your window to get pictures from your automobile. But if you can't or don't want to, avoid shooting through your side windows. Unlike your front windshield, generally made of higher quality glass, side-window glass sometimes has waves in it. Like the curved part of the windshield, this would cause distortions in your picture.

Car travel and photography also bring up several problems and faults in camera storage. Don't leave your camera lying precariously on the seat beside you. A quick stop can pitch it onto the floor and damage it. Don't store it in the glove compartment or trunk, because both these places get excessively hot during the summer. And heat can easily injure both your camera and film.

And don't leave your camera sitting out in the open when your car is parked, as an open invitation for someone to steal it. Cameras are valuable, and persons will often force windows when they see a camera sitting in the car. Place it under the seat or take it along with you when you leave the car. Don't get half way through your trip and then suddenly find yourself without a camera because of carelessness. Treat your camera like the valuable possession it is.

DO . . .

1 Open your window and take your pictures without shooting through the window glass whenever possible.

2 Remember the general principles that apply when you're shooting pictures while moving.

3 Observe faithfully all the safety precautions of driving such as not lagging on busy highways, signaling when you want to stop or turn off, and pulling completely off the highway when you do stop.

DON'T . . .

1 Distract the driver with your picture-taking, because the job of handling the car safely is infinitely more important.

2 Store your camera in the glove compartment, trunk, or anywhere else in the car that gets excessively hot.

3 Leave your camera out in the open when you're parked and away from the car—it's an invitation for thieves to force the windows and steal it.

PLANES

Since most people can't charter their own airplanes, the problems of aerial photography for the amateur are mostly those of taking pictures on commercial airliners. Unlike photography on land, shooting from airliners presents special considerations peculiar to high altitudes.

The first of these is haze, which is always present in the atmosphere and which tends to give color films a bluish cast. This haze effect increases the higher you fly. The best way to minimize it is through the use of filters such as a "skylight" or a light yellow, both of which cut the haze effect. Other filters will do the job and should be investigated if you plan to take a lot of aerial pictures.

Plane motion is another serious factor, and bumpy air can make it worse. For that reason, a relatively high shutter speed is important, particularly when the plane is closer to the ground and the apparent ground speed is thus greater. As a rule, no shutter speeds less than 1/100 second should be used, and 1/200 is best when taking off or landing.

Above all, the camera should never be rested against a part of the plane such as the window because of the plane's vibrations. If you can, use a pillow to cushion or support your elbows when you shoot, for this will help insulate against some of the vibration. And draw the side curtains to reduce reflections from the plane's interior.

As in distant landscape photography, the focusing is simple—always have your camera set on infinity. Yet your great distance from the subject may be a handicap if you fail to include in your pictures some easily recognizable object or feature of the terrain that will give some idea of scale. Try to get an important center of interest.

The time of day at which you shoot is also important in making black-and-white pictures in summer. Probably the best time to get long ground shadows which add much to your pictures is from an hour after sunrise to two hours before noon and from two hours after noon to an hour before sunset. Shadows are shorter during the middle of the day, giving you better ground detail but lowering the contrast in your pictures and bas-relief effect.

The best spot for taking aerial pictures is from the rear of the plane, away from the wings and the turbulent hot air from the engines' exhaust. The shady side of the plane is the most desirable because the haze effect is less and direct sunlight on your windows magnifies the effect of scratches, dirt, and flaws in the glass. Ask your hostess which will be the shady side during most of the flight and pick your seat accordingly. She can also help you in making any temporary seating change that will give you a chance for a better picture.

You'll find that the plane's personnel will give you good suggestions for photographic possibilities. They can tell you about them long before the plane reaches the spot. They can also let you know if you're forbidden to photograph certain military sites, something you can't determine while you're flying over them.

Too often aerial views lack interest because the photographer failed to choose an interesting subject. Ground patterns usually make the most interesting shots, and they can be made best at comparatively low levels where haze is not such a problem and when you are not so distant from the subject. Watch for subjects like the "S" curves of rivers and valleys, expressway cloverleafs, the "checkerboard" effect of farm fields, prominent mountain ranges, and well-known scenic attractions such as the Grand Canyon or the Eiffel Tower.

DO . . .

1 Compensate for the haze problem by the use of filters or else increased exposure.

2 Keep your shutter speed high enough to eliminate camera movement resulting from the plane's vibrations.

3 Include some recognizable object as the center of interest in your pictures to give an idea of scale.

4 Pick a seat near the rear of the plane where you can get pictures of something else besides the wing of the plane.

DON'T . . .

1 Rest or support your camera against the window or some other part of the plane where you pick up all the vibrations.

2 Shoot directly into the sun, because the sunlight will magnify the effects of any scratches, dirt, or flaws in the window glass.

3 Fail to ask your hostess what she thinks will be interesting spots to photograph as you fly over.

4 Photograph uninteresting subjects that lack contrast and have no genuine focal point or center of interest.

WHERE TO WRITE FOR TRAVEL INFORMATION

The more you know about the place you will be seeing or traveling through, the better qualified you are to organize the *right* equipment to take along with you. Pre-planning will not only help your picture taking but it will insure your not missing any of the important events and areas during your tour. To help you plan your trip, there are many organizations ready to help (free of charge). We have listed the following addresses covering every area of the United States and many foreign countries. Take advantage of the information they have to offer.

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United States

ALABAMA
BUREAU OF PUBLICITY & INFORMATION
State Capitol, Montgomery 5
STATE CHAMBER OF COMMERCE
468 S. Perry St., Montgomery 1

ARIZONA
DEPT. OF TRAVEL AND INFORMATION
State Highway Department
Phoenix

ARKANSAS
PUBLICITY AND PARKS COMMISSION
162 State Capitol, Little Rock
OZARK PLAYGROUND ASSOCIATION
Joplin, Missouri

CALIFORNIA
Southern California
ALL-YEAR CLUB OF SOUTHERN CALIFORNIA
628 W. Sixth St., Los Angeles 17
SAN DIEGO CONVENTION AND TOURIST BUREAU
924 Second Ave., San Diego 1
Coast-Los Angeles to San Francisco
CALIFORNIA MISSION TRAILS ASSN., LTD.
6912 Hollywood Blvd., Los Angeles 28
San Francisco Area
CALIFORNIANS INC.
703 Market St., San Francisco 3
Northern Coast Section
REDWOOD EMPIRE ASSN.
85 Post St., San Francisco 4
Northeastern Area
SHASTA-CASCADE WONDERLAND ASSN.
P. O. Box 151, Parkview & South Market Streets
Redding
Lake Tahoe Area
LAKE TAHOE-SIERRA CHAMBER OF COMMERCE
Tahoe City

COLORADO
COLORADO ADVERTISING AND PUBLICITY COMMITTEE
Capitol Building, Denver 2

CONNECTICUT
CONNECTICUT DEVELOPMENT COMMISSION
State Office Building, Hartford 15
NEW ENGLAND COUNCIL
Statler Building, Boston 16, Mass.

DELAWARE
DELAWARE STATE DEVELOPMENT DEPARTMENT
Dover

DISTRICT OF COLUMBIA
NATIONAL PARK SERVICE
Department of the Interior
Washington 25
GREATER NATIONAL CAPITAL COMMITTEE
1616 K St., N. W., Washington 4

FLORIDA
FLORIDA DEVELOPMENT COMMISSION
Caldwell Building, Tallahassee

GEORGIA
GEORGIA DEPARTMENT OF COMMERCE
100 State Capitol, Atlanta

IDAHO
IDAHO DEPT. OF COMMERCE AND DEVELOPMENT
State House, Boise

ILLINOIS
DIVISION OF DEPARTMENT REPORTS
406 State House, Springfield

INDIANA
DEPT. OF COMMERCE & PUBLIC RELATIONS
333 State House, Indianapolis 4

IOWA
IOWA DEVELOPMENT COMMISSION
200 Jewett Building, Des Moines 9

KANSAS
KANSAS INDUSTRIAL DEVELOPMENT COMMISSION
State Office Building, Topeka

KENTUCKY
DEPARTMENT OF PUBLIC RELATIONS
Capitol Annex Building, Frankfort

LOUISIANA
TOURIST BUREAU
DEPARTMENT OF COMMERCE AND INDUSTRY
P. O. Box 4291, Baton Rouge 4

MAINE
DEPT. OF DEVELOPMENT OF INDUSTRY & COMMERCE
State House, Augusta
MAINE PUBLICITY BUREAU
Gateway Circle, Portland 4
Also 30 Rockefeller Plaza, New York 20
NEW ENGLAND COUNCIL
Statler Building, Boston 16, Mass.

MARYLAND
STATE OF MARYLAND
DEPARTMENT OF INFORMATION
Annapolis

MASSACHUSETTS
MASSACHUSETTS DEPARTMENT OF COMMERCE
334 Boylston St., Boston 16
NEW ENGLAND COUNCIL
Statler Building, Boston 16

MICHIGAN
MICHIGAN TOURIST COUNCIL
Stevens T. Mason Building, Lansing 4
WEST MICHIGAN TOURIST & RESORT ASSN.
Rowe Hotel, Grand Rapids 2
SOUTHEASTERN MICHIGAN TOURIST & PUBLICITY ASSN.
1407 Washington Blvd., Detroit 26
EAST MICHIGAN TOURIST ASSN.
Bay City
UPPER PENINSULA DEVELOPMENT BUREAU
Marquette

MINNESOTA
MINNESOTA DIVISION OF PUBLICITY
220 State Office Building, St. Paul 1

MISSISSIPPI
MISSISSIPPI AGRICULTURAL & INDUSTRIAL BOARD
1504 State Office Building, Jackson 5

MISSOURI
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MONTANA CHAMBER OF COMMERCE
P. O. Box 1730, Helena

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NEVADA
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State Capitol, Carson City

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State House Annex, Concord
NEW ENGLAND COUNCIL
Statler Building, Boston 16, Mass.

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DEPT. OF CONSERVATION & ECONOMIC DEVELOPMENT
State Promotion Section
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NEW MEXICO STATE TOURIST BUREAU
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NEW YORK
TRAVEL BUREAU
NEW YORK STATE DEPARTMENT OF COMMERCE
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NEW YORK STATE CONSERVATION DEPARTMENT
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OHIO DEVELOPMENT & PUBLICITY COMMISSION
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State Office Building, Richmond 19

WASHINGTON
DEPARTMENT OF CONSERVATION & DEVELOPMENT
General Administration Building, Olympia

WEST VIRGINIA
W. VA. INDUSTRIAL AND PUBLICITY COMMISSION
State Capitol, Charleston 5

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WISCONSIN CONSERVATION DEPARTMENT
RECREATIONAL PUBLICITY SERVICE
830 State Office Building, Madison 1

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WYOMING TRAVEL COMMISSION
213 Capitol Building, Cheyenne

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ALASKA VISITORS ASSOCIATION
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CANADIAN GOVERNMENT TRAVEL BUREAU
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DANISH NATIONAL TRAVEL OFFICE
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FRENCH GOVT. TOURIST OFFICE
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IRISH TOURIST BUREAU
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21 E. 51st St., New York 22

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TIPS FOR THE TRAVEL-WISE

BAD WEATHER BLUES—Don't get them on your vacation, because you can take pictures in virtually any kind of weather. Some photographers feel the best pictures can be made when the sun is *not* shining brightly. Beautiful monochromatic color pictures can be made on overcast days—just remember to increase your exposure when the light is poor. If you're determined to have sunny pictures on overcast days, add a yellow filter to warm up the tones. And if it's too dark for color, remember you can get effective, off-beat black-and-white pictures when the weather's bad.

ACTION IS EASY—If you remember three things: (1) The closer the action is to you, the faster your shutter speed has to be; (2) A subject moving at a right angle to you takes a higher shutter speed than one moving toward you at a more inclined angle; (3) Subjects moving directly toward you can be stopped with the slower shutter speeds.

KEEP IT CLEAN—Your camera, especially its lens, should be looked at and if necessary cleaned after every use. Never use your handkerchief to clean the lens, but get a lens brush or use lens tissue. People who complain of dim viewfinders usually have them smudged with fingerprints. If you go to the ocean, watch out for the corrosive effects of salt water and spray. If you shoot in a rain or dust storm, protect your lens with a filter. They're cheaper than lenses.

WANDER ON YOUR OWN—If you go with a group you'll be conspicuous and you'll probably get only the pictures the others get. Be brave, be bold—and take the unexplored streets and byways off the beaten path. And leave behind your friend who has no camera—he's the worst liability, for he'll never understand why it takes so long to get a picture and he'll hurry you into poor ones.

SIMPLICITY IS THE KEY—The best pictures are usually the most simple, with nothing to distract from the photographer's point of view. Concentrate on getting in the picture only what you want, and avoid cluttered, eye-catching backgrounds that detract from your subject. Minimize a jumbled background by throwing it out of focus with a wide lens opening. Try shooting from a low angle with only the sky as a background.

SLOW FILMS FOR BRIGHT LIGHT—High-speed films are wonderful, but not in bright daylight when it's so easy to overexpose and get dense negatives with objectionable grain. Learn the characteristics of at least two kinds of film (one fast, the other slow or medium speed) and don't use the high-speed films if you have no need for the extra speed. Remember that the slower the film, the better the grain and resolution quality.

TAKE YOUR TIME—One good picture is worth many poor ones. If the picture is really good, it's worth waiting for and worth shooting more than once. If you're not planning to return to the scene soon, make your chance count by bracketing your exposures and getting the picture you want. Don't be stampeded into shooting pictures everyone else takes. Select what you like and then get it.

CAREFUL ON CLOSE-UPS—If you use extension tubes for extreme close-ups, you also have to increase your exposure. With most lenses, you'll get distortion when shooting as close as focusing permits. Since your depth of field gets smaller the closer you get, your focus has to be more critical. And your viewfinder will not give you the same picture your lens will record unless you have parallax correction. To be sure, allow slightly more than normal space at the top of the area you want to be in your picture.

PLAN YOUR SLIDE SHOW NOW

HALF THE FUN of photography, and vacations, is sharing pictures with an interested audience. Whether you vacation near home or travel far away, you can plan your summer shooting enroute to make an entertaining slide show. You're bound to film the high points that make a good program—the most exciting things you see and do. The trick is to get the other pictures you need, along the way, so you will have them at hand when it's time to put your show together.

These are the pictures that fit in between your vacation highlights, the ones you may not take unless you think about them beforehand. They help identify the places you've been. They establish continuity, bridging the gaps when your camera shifts from one locality to another. They show important subjects from different angles, revealing more about them and providing a variety of pictures on the screen when you have a long story to tell.

Unless a show is just a bunch of pretty shots, almost every slide in it can be made to mean much more if it is accompanied by some explanation. People like to know where they are, what they are seeing. This calls for narration. Good fill-in shots help weld the words and pictures together. At times they serve as notes, reminding you of things you want to mention. Again, they can replace bits of narration altogether.

The relative beginner in photography often is much better at this sort of thing than the expert pictorialist. If you've been shooting for camera club contests and the exhibitions, you may have some things to unlearn. Each slide stands alone in these competitions. You get into the habit of looking for pictures as single units, individual masterpieces. Pictures for a vacation slide show are different. You need as many important pictures as you can get, of course, but in between them you also want little shots that help tell the story of your outing. They don't have to be pictorially perfect to do their job. Getting all the right pictures is the first step in showmanship—the art of combining slides and narration to create an entertaining program.

It's easy to label the segments of a vacation travelog merely by reciting the name of each place visited, but you can do it better with pictures. Many scenes contain built-in titles, yours for the shooting. Highway markers, signs at depots and airports, historical plaques, labeled gateways, roadside mailboxes, street signs—these are but a few of the possibilities. You often can find effective titling material right on the spot while taking pictures; just look around.

If you travel by car, the glass of an automobile window can be pressed into service as a titling frame. Plastic title letters that stick to clean glass on contact, without adhesive, and can be removed with ease, are available at most photo supply stores. Letter the title on the glass so it reads correctly from inside, then maneuver your car into postion so a scene typical of the area you are visiting is framed through the window. Shoot from inside, showing the title against the outdoor view as a background. Base your exposure on the *scene* and use the smallest possible lens opening to get both it and the lettering satisfactorily sharp. More formal titles like these are fine for a show that breaks into a few main sections.

Once we've finished prospecting for pictures in a given area and are ready to move on, we're likely to pack the camera away until challenging new scenes prompt us to bring it out again. This creates gaps in a slide show at a point where you move from place to place. Short jumps in time and space are easy to bridge with narration. You can say, "A few miles down the road we saw this . . ." and let it go at that. More abrupt moves call for transitions, especially if they involve a great distance or an important change in subject matter.

Trains, planes, boats, automobiles—all the methods of transportation lend themselves to transition pictures. If you remember the need, something appropriate is sure to suggest itself as you go along. A transition shot needn't be a stopper to serve its purpose. What you need is something that is in keeping with your story, to occupy the screen during the brief interval when you have finished with one location and are introducing the next. A view down a roadway typical of the area you are leaving may serve the purpose. If you go by plane, a shot of cloud formations with a wing in the foreground will do very well. If it does nothing else, the transition shot will remind you, in presenting your show, that it's time to prepare your audience for the next series of pictures. It will keep you from suddenly finding yourself and your audience in New York while you still are talking about San Francisco.

When shooting locations are close together you can use transition shots to establish this relationship. Suppose you've made a series of pictures at the Lincoln Memorial in Washington, D. C., and are going next to the Washington Monument. Before you start down the Mall, take a picture of the Monument, framed between columns of the Memorial. It will provide a

transition and reveal their relative locations at the same time. The success of a show doesn't depend on linking every series of slides together like this, by any means, but the trick adds a nice touch. Keep an eye open for opportunities to use it.

Everything worth covering in a slide program doesn't necessarily show up at all in the pictures. Sometimes the stories behind people, things, and places are so intriguing that you want to tell about them. Suppose, for example, you come across an old prospector who spins a fabulous yarn of striking gold in the very hills you're climbing. It's a story worth repeating, you decide. Then don't just shoot a straight, portrait-type picture of him and let it go at that. Show him from different angles, sometimes against those hills as background. Catch gestures he makes with his hands or the way he fills his pipe. These slides won't actually tell his story any better, but they will provide a pleasing change of pace.

A story has got to be good to stand without closely related pictures, but this is a way to work one in painlessly when you just can't pass it up. The same approach works to good advantage with the scene of an important event you want to describe. Use the moviemaker's technique of taking long shot, medium shot, and close-up to move in on the center of interest as the story unfolds.

No matter how many pictures you take, you probably will wish you had a few particular ones that are missing when you get around to putting your show together. Try to visualize your needs by thinking of how you will present each series of slides as you are taking it. If you like to work things out on paper you can even make a list of the shots you want ahead of time. Some won't materialize and unplanned opportunities will come along, but working on the list may help by forcing your thinking in the right direction.

Pictures aren't the only things you'll want to bring back for your slide show. Guide books contain a wealth of information that comes in handy when you're looking for interesting things to say about the places you have visited. Maps and travel folders will be of help when you start sorting your slides and placing them in order.

Film is the least expensive part of almost any vacation outing. Use plenty, with thought, to get those valuable extra shots as well as the vacation highlights everybody takes for granted. Your show will gain by it, and you'll have more fun putting it together and presenting it before an audience.—

SIX WAYS YOU CAN DARKEN THE SKY. More than likely, the sky will play an important part in your outdoor scenics. For dramatic effect you may want to darken it. You can: **1** Use a filter like the K (yellow), X-1 (light green), or A (Red). Remember if you under- or overexpose with a filter the effect will be increased. **2** Use a polarizing filter. **3** You can underexpose slightly making the negative just thin enough so it will print dark. **4** Use infrared film. **5** At close distances outdoors use flash. Light hitting subject will keep it light-toned and sky will go dark. **6** You can burn-in when making your print.

SHOOT YOUR OWN PASSPORT PICTURES. You can make them with either black-and-white or color. Here are the specifications for the black-and-white as given by the United States Department of State: "Two photographs (duplicate) taken within 6 months before they are submitted must be presented of each person named in the application. One of the photographs must be signed by the applicant.

"A group photograph should be presented if practicable when a wife, or wife and children, are included in one application.

"Photographs must be full face, on thin unglazed paper with a light background and not over 3 by 3 inches nor less than 2½ by 2½ inches in size."

Here's the official word on color photographs from the Department: "The color photograph must be printed on a paper base. The print should be capable of withstanding a mounting temperature from 180 degrees to 200 degrees F. Black-and-white prints which have been colored will not be acceptable. The same specifications regarding the size, background, etc., will apply as are now required for black-and-white passport photographs."

TEN UNDERWATER SAFETY RULES. You should observe these: **1** *Never swim alone.* Unforeseen dangers lurk beneath the sea; therefore, always swim with a companion. **2** *Don't swim in poor physical condition.* A bad heart, bad lungs, asthma, a cold, or sinus trouble can be extremely dangerous. **3** *Avoid heavy eating.* Don't eat heavy, greasy foods. They may cause cramps. **4** *Don't swim hungry.* Chocolates and other fast energy foods should be eaten before going under. **5** *Don't panic if you encounter a shark.* Sharks think you're a big fish and won't attack. Move very slowly. **6** *Always carry a knife.* It can free you from a tangle with a fish line. **7** *Check your breathing apparatus.* Make sure your tank is filled with the right air. **8** *Use a straight snorkle.* Curved snorkles suck in water. Use one at least 12 inches long. **9** *Use the right kind of diving mask.* It should have safety-glass windows closely fitting eyes and nose. **10** *Select swim fins carefully.* Make sure they fit. If they're too tight they will impair your circulation.

USEFUL FOREIGN SENTENCES FOR THE PHOTOGRAPHER ABROAD

ENGLISH

USE NUMBERS LISTED BEFORE EACH SENTENCE TO IDENTIFY THE FOREIGN TRANSLATION.

1 May I take your picture?

2 Please turn to the right (left).

3 Please don't look at the camera.

4 Smile. Don't smile.

5 Stand closer together. Don't stand so close to each other.

6 Move forward, away from the wall. Move back.

7 Where is the nearest camera store?

8 Please continue what you were doing. I want a natural picture.

FRENCH

1 Puis-je prendre votre photo?
(Pweezh prahndr vohtr fohtoh?)

2 Tournez à droite (gauche) s'il vous plaît.
(Toor-neh z'ah drwaht [gohsh] seel voo pleh.)

3 Ne regardez pas l'appareil s'il vous plaît.
(Nuh reh-gahr-deh pah l'ah-pah-ray seel voo pleh.)

4 Souriez! Ne souriez pas.
(Soo-r'yeh. Nuh soo-r'yeh pah.)

5 Rapprochez-vous l'un de l'autre. Eloignez-vous l'un de l'autre.
(Rah-proh-sheh voo l'uhn duh l'ohtr. Eh-lwah-nyeh voo l'uhn duh l'ohtr.)

6 Venez plus près, éloignez-vous du mur. Reculez.
(Vuh-neh plew preh, eh-lwah-n'yeh voo dew mewr. Ruh-koo-leh.)

7 Où se trouve le photographe le plus proche?
(Oo suh troov luh foh-toh-graphe luh plew prohsh?)

8 Continuez comme vous faisiez. Je voudrais une pose naturelle.
(Kohn-tee-nweh kohm voo feh-z'yeh. Zhuh voo-dreh ewn pohz nah-tew-rell.)

SPANISH

1 ¿Puedo sacarle una foto?
(PWEH-doh sah-KAHR-leh OO-nah FOH-toh?)

2 Sírvase dar una vuelta hacia la derecha (izquierda).
(SEER-vah-seh dahr OO-nah VWEHL-tah AH-th'yah lah deh-REH-chah (eeth-K'YEHR-dah).

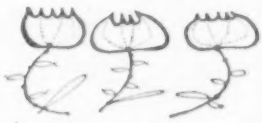
3 Por favor no mire la cámara directamente.
(Pohr fah-VOHR noh MEE-reh lah KAH-mah-rah dee-rehk-tah-MEHN-teh.)

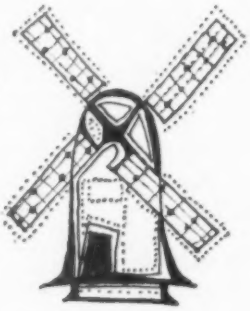
4 Sírvase sonreir. No sonría, por favor.
(SEER-vah-seh sohn-reh-EER. Noh sohn-REE-ah, pohr fah-VOHR.)

6 Júntense más, por favor. Sepárense un poco, por favor. Retroceda un poco.
(HOON-tehn-seh mahs, pohr fah-VOHR. Seh-PAHR-ehn-seh oon POH-koh, pohr fah-VOHR. Reh-troh-THEH-dah oon POH-koh.)

7 Sírvase indicarme la casa fotográfica más cercana.
(SEER-vah-seh een-dee-KAHR-meh lah KAH-sah foh-toh-GRAH-fee—kah mahs theh-KAH-nah.)

8 Continúe haciendo lo que hacía. Yo quiero una pose natural.
(Kohn-tee-NOO-eh ah-TH'YEHN-doh loh keh ah-THee-ah. Yoh K'YEH-roh OO-nah POH-seh nah-too-RAHL.)





DUTCH

1 Mag ik een foto van U nemen?
(Mahkh eek ayn FOH-toh vahn ew NEH-mehn?)

2 Draai alstublieft naar rechts (links).
(Dry ahls-tew-bleeft nahr rehkhts [links].)

3 Kijk niet naar het toestel alstublieft.
(Kayk neet nahr hat TOO-stehl ahls-tew-bleeft.)

4 Lach alstublieft. Niet lachen alstublieft.
(Lahkh ahls-tew-bleeft. Neet lahkh'n ahls-tew-bleeft.)

5 Sta dichter by elkaar alstublieft. Sta niet zo dicht by elkander alstublieft.
(Stah DEEKH-tehr by EHL-kahr ahls tew bleeft. Stah neet zoh deekht by ehl-KAHN-d'r ahls-tew-bleeft.)

6 Niet zo dicht tegen de muur, kom een beetje vooruit.
(Neet zoh deekht TEH-g'n de mewr, kohm ayn BAYT-yeh voroyt.)

7 Waar is de dichtsbijzijnde foto-zaak?
(Vahr is de DEEHKHTS-by-ZEEN-deh FOH-toh-zahk?)

8 Ga door wat U aan't doen bent. Ik zou graag een foto in actie hebben.
(Chah dohr met vaht ew ahnet doon bent. Eek zow ghraakh ayn FOH-toh in AHK-see hab'n.)

GERMAN

1 Darf ich Sie photographieren?
(Dahrf ihkh zee foh-toh-graph-FEE-r'n?)

2 Bitte, schauen Sie nach rechts! (links!)
(BIT-teh, show'n zee nahkh rehkts! [links!])

3 Bitte schauen Sie nicht in den Apparat!
(BIT-teh, show'n zee nikht in dehn ah-pah-RAHT!)

4 Lächeln sie, bitte! Bitte, lächeln Sie nicht!
(LEH-kheln zee BIT-teh! BIT-teh, LEH-kheln zee nikht!)

5 Näher zusammen! Nicht so nah zusammen!
(NEH-hehr tsoo-ZAH-mehn!) Nikht zoh nah tsoo-ZAH-mehn!)

6 Etwas nach vorne, bitte, von der Mauer weg! Etwas zurück, bitte!
(EHT-vahs nahkh FOHR-neh, BIT-teh, fohn dehr Mow'r vehk! EHT-vahs tsoo-REWK, BIT-teh!)

7 Wo ist das nächste Photogeschäft?
(Voh ist dahs NEHK-steh FOH-toh-geh-shehft?)

8 Bleiben Sie, bitte, wie Sie waren. Ich möchte ein natürliches Bild haben.
(BLIGH-b'n zee, BIT-teh, vee zee VAH-r'n. Ikh MUHKH-teh ine nah-TEWR-lee-khes bilt HAH-b'n.)

Translated by Charles Berlitz
of the BERLITZ SCHOOLS of LANGUAGES
The phonetic renditions of the foreign phrases which are given in parentheses are examples of the pronunciation-at-a-glance method used in the Berlitz Phrase Books for Travelers (French, German, Spanish and Italian) as well as the Self-Teaching Language Books also developed by Berlitz.

PORTUGUESE

1 Posso tirar a sua fotografia (foto)?
(POH-soh tee-RAHR ah SOO-ah foh-toh-grahFEE-ah [FOH-toh]?)

2 Volte-se para a direita (esquerda), faça favor.
(VOHL-teh-seh PAH-rah ah dee-RAY-tah [ehs-KEHR-dah], FAH-sah fah-VOHR.)

3 Não olhe para a máquina, faça favor.
(Nowngh OH-l'yeh PAH-rah ah MAH-kee-nah, FAH-sah fah-VOHR.)

4 Sorria-se. Não se sorria.
(Soh-RREE-ah-seh. Nowngh seh soh-RREE-ah.)

5 Juntem-se mais. Não estejam tão juntos (uns dos outros).
(JOON-tengh-seh mise. Nowngh ehs-TEH-jowngh towngh JOON-tohs [oons dohs OH-trohs].)

6 Venham mais para a frente, afastem-se do muro. Cheguem-se para trás.
(VEH-n'yowngh mise PAH-rah ah FREHN-teh, ah-FAHS-tengh-seh doh MOO-roh. SHEH-guengh-seh PAH-rah trahs.)

7 Onde fica a casa de máquinas fotográficas mais perto?
(OHN-deh FEE-kah ah KAH-sah deh MAH-kee-nahs foh-toh-GRAH-fee-kahs mise PEHR-toh?)

8 Pode continuar a fazer o que estava. Eu queria uma foto natural.
(POH-deh kohn-tee-NWAHR ah fah-ZEHR oh keh ehs-TAH-vah, EH-oo keh-REE-yah OO-mah FOH-toh nah-too-RAHL.)

ITALIAN

1 Posso farLe una fotografia?
(POHS-soh FAHR-leh OO-nah foh-toh-grah-FEE-ah?)

2 Per favore, si volti a destra (sinistra).
(Pehr fah-VOH-reh see VOHL-tee ah DEH-strah [see-NEE-stra].)

3 Per piacere, non guardi la macchina.
(Pehr p'yah-CHEH-reh, nohn g'WAHR-dee lah MAHK-kee-nah.)

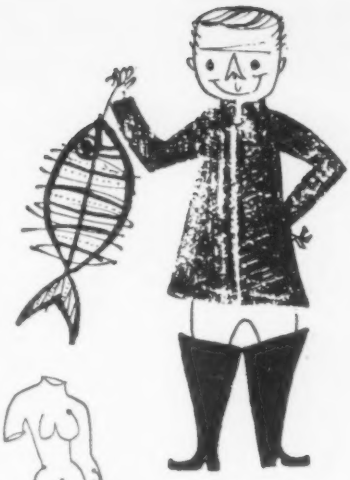
4 Sorrida. Non sorrida.
(Sohr-REE-dah. Nohn sohr-REE-dah.)

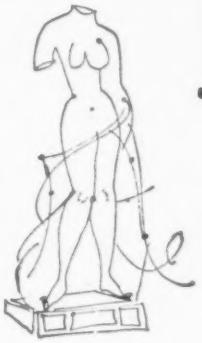
5 Stiano più vicini. Stiano meno vicini l'uno all'altro.
(STEE-ah-noh p'YOO vee-CHEE-nee. STEE-ah-noh MEH-noh vee-CHEE-nee LOO-noh ahl-LAHL-troh.)

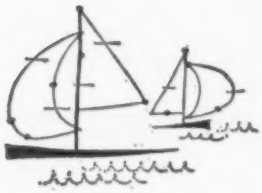
6 Si sposti in avanti, lontano dal muro. Si sposti indietro.
(See SPOH-stee een ah-VAHN-tee, lohn-TAH-noh dahl MOO-roh. See SPOH-stee een-d'YEH-troh.)

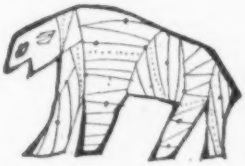
7 Dov'è il più vicino negozio di articoli fotografici?
(Doh-VEH eel p'YOO vee-CHEE-noh neh-GOH-ts'yoh dee ahr-TEE-koh-lee foh-toh-GRAH-fee-chee?)

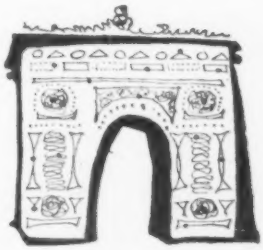
8 Per favore, continui a fare quello che stava facendo. Desidero una fotografia naturale.
(Pehr fah-VOH-reh kohn-TEE-nooee ah FAH-reh k'WEHL-loh keh STAH-vah fah-CHEHN-doh. Deh-SEE-deh-roh OO-nah foh-toh-grah-FEE-ah nah-too-RAH-leh.)











NORWEGIAN

1 Får jeg lov a ta bild av Dem?
(For yehg lawv awe tah bild av Dem?)

2 Vær så snil og snu seg til retten (venstre).
(Vare saw snil awg snue seg til RETten. [VENstre].)

3 Vær så snil og ikke se på fotografiapparat.
(Vare saw snil awg IKke seh paw fotoGRAFEEapparaht.)

4 Smil. Ikke smil.
(Smeel . . . IKkeh smeel.)

5 Sta tett i sammen. Ikke stå så tett med hver andre.
(Staw teTT ee SAMmen. IKkeh staw teTT mehd ver ANdreh.)

6 Kom hit, vekk fra veggen. Flytte tilbake.
(Come heet, vek frah VEGgen. FLITteh tilBahkeh.)

7 Hvor er det nærmeste fotografiapparat butikk?
(Vor air deh NAREmesteh fotoGRAFEEapparat buTICK?)

8 Vær så snil og fortsette hva De gjörde. Jeg vil ha et naturlig bild.
(Vare saw snil awg FORTsetteh vah dee YOURdeh. Yeg vill hah et naTOURLIG bild.)

DANISH

1 Maa jeg fotografere Dem?
(Maw eei foh-toh-grah-fehr dehm?)

2 Saelp nurt ot tfel.
(Sep nrt ot tel.)

3 Vaer saa venlig ikke at se ind i apparatet.
(Vehr saw venlih ehggeh a seh inn ee aparáh-teht.)

4 Smil! Ikke smile!
(Smeel. Ehggeh smee-leh!)

5 Staa taettere sammen. Staa ikke saa teet ved hinanden.
(Staw tehter zahm-mehn. Staw ehgeh saw tett ve heen-ahnen.)

6 Traed frem, bort fra Vaeggen. Traed tilbage.
(Trehth frehm bort frah veh-gehn. Trehth teba'eh.)

7 Hvor er den naermeste kamera-Butik?
(Vor ehr dehn nehr-mehsteh kah-meh-rah-boo-teek?)

8 Had Dem ikke forstyrre. Jeg vil gerne have et naturligt Billete.
(Hah dehm ehggeh fohr-stew-reh. Eei vee gehrne hah ett nah-toor-likt bill-eh-teh.)

SWEDISH

1 Får jag ta en bild av Er?
(For yoag tah aen build aav air?)

2 Var snäll och vänd er till höger (vänster).
(Vahr snell ohk vae-nd air till hoegehr [vaen-stehr].)

3 Var snäll och titta inten på kameran.
(Vahr snell ohk titt-ah in-teh poh kah-mehran.)

4 Le. Le inte.
(Leh. Leh in-teh.)

5 Stå närmare varandra. Stå inte så nära varandra.
(Stoh naer-mahreh vahr-an-drah. Stoh in-teh soo nae-rha vahr-an-drah.)

6 Flytta fram från väggen. Flytta bakåt.
(Flitt-ha frahm frohn vae-ghn. Flitt-ha baahk-oot.)

7 Var ligger närmaste kamera-affär?
(Vahr ligg-ehr naer-mahs-teh kah-meh-rah-ah-faer?)

8 Var snäll och fortsätt med vad ni gjorde. Jag vill ha en naturlig bild.
(Vahr snell ohk fohrt-saet mehd vahd nee yooh-rd-eh. Yoag vill hah aen nah-tur-leeg build.)

EQUIPMENT MAINTENANCE, INSURANCE

It is only common sense to insure your cameras and other valuables before setting out on a trip. In fact, all your equipment may be inexpensively insured when at home and you may include other expensive and easily portable possessions in the same "personal articles floater" policy. This covers against theft, loss, or damage under almost any circumstances.

You should check the fine print in your present policies. Most of those written during the last several years protect you no matter where you travel. Some which have been in effect for a long time may still cover the insured articles only in the United States and its possessions. If your policy is one of the latter, take it to your agent and have it modified.

If you are taking out a new policy, do not put down the value of a used camera as the list price when new. You will only be using up coverage which could be applied to other personal articles of any kind, for the company will pay off only at the current market value of a used camera of your model (even if yours had "the best Biotar" you've ever used). The company generally reserves an option to replace a missing camera with an "equivalent" one of the same make and model.

If a camera is lost or stolen while you are on a trip, report this immediately to the local police with the serial numbers of body and lens, if they are separate. (If you're abroad, you should have a record of these with you, of course, in addition to the listing on Form 4455 filled out for the U.S. Customs before you left.)

Report this as well to your insurance agent or broker at home. At worst you may have the consolation of a settlement check awaiting you.

If your camera is damaged seriously, this too should be reported to your insurance agent by letter. If repair services are available, inform him of the actual or estimated charges, have it attended to, and ask for a receipted bill. The loss will be adjusted when you return.

How adequate are repair services outside the U.S.? This is not easy to summarize, for it depends on the country and the city in which you find yourself and on the make of your camera and the parts needed.

Minor adjustments and repairs should be no problem in any of the principal cities you will visit. Synchronization, rangefinder adjustment, even a sticky shutter can be handled by a good repair man on nearly any camera. One of the larger camera stores in these cities will do such work for you or direct you to the proper person.

Repairs requiring the replacement of parts may be more difficult—at least for some cameras in some cities. Again, the larger camera stores should be able to give you the address of the sales agency nearest you, or one in another country on your scheduled tour. Most of the German and Japanese cameras popular in the U.S. now have either agents or a complete distributing set-up in almost all of the countries of Europe and the Western Hemisphere. Those who do not maintain their own service (to back up camera guarantees) will have connections with a man or shop skilled in dealing with their camera.

As a last resort, and if you own one of several cameras of professional quality, you can return a damaged camera directly to the U.S. importer by air express. You should make arrangements by mail or cable first, of course, to determine whether it can be returned to you in time to be of any use on your trip. (You won't be far wrong to estimate a month, even if it goes both ways by air.) If you are abroad and want it to reach you while you are still traveling, make arrangements also with the nearest customs office so you will not be charged an import duty when it arrives.

Should you be overseas and send a foreign-manufactured camera home for repair, the U.S. Customs will also regard it as an import, and in order for it to reach the repair station without duty charged against it, mark it plainly on the outside: "Camera for repair." In addition, you must enclose your copy of U.S. Customs Form 4455, the form on which you listed all of your foreign-made equipment before you left the United States. This enclosure is your proof of ownership.

Be sure to remind the repair service to return this Form 4455 to you if you have additional foreign-made equipment abroad with you. When you return, the U.S. Customs may temporarily impound such articles if you cannot produce the document. It will take several days before they can check against their own copy of this record and release your property. You may be able to clear these items through if you can offer alternate acceptable proof of ownership.

If the camera you are returning is an American-made one, addressed to your dealer or to a repair man known to you, mark it "U.S. camera for repair." No special enclosure is necessary; domestically manufactured products are not listed on Form 4455.

The chances are excellent, of course, that you will not become involved in this particular hassle with customs red tape. In fact, you may well encounter no difficulties at all as you cross the borders of most countries. Inspectors are apt to be fearful and wonderful in their ways, and unpredictable as well.

Everywhere else (well, nearly everywhere) a pleasant manner, a fair knowledge of the rules which apply—and, if possible, a pretty wife with a charming smile—will ease most difficulties. Two of these strategies cost nothing: the courtesy due from you as a guest in other people's countries together with a working knowledge of the rules these lands consider necessary for their welfare, will make all aspects of your trip much more pleasant. Whether you drive up into Canada for a few days' relaxation or spend three months at the edge of the Iron Curtain, you and millions of other Americans are going to have a wonderful time. There is an excellent chance, too, that you will bring back a more acute picture sense after exposure to so much unfamiliar visual experience. This will carry over in your photographs of home scenes as you view them with fresh eyes.

If all goes well, we'll be there, too—with as much film and as many cameras as the rules permit!—▶

WINDOW SHOPPING WITH A CAMERA

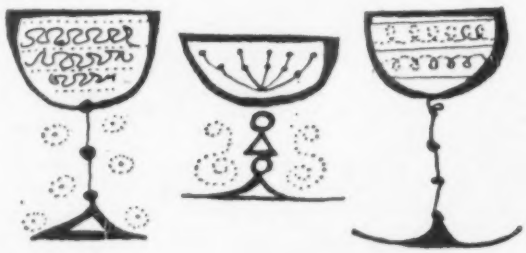
To a woman, a visit to the city often means smart shops, large department stores, some buying and much window shopping. Why not take your camera on your window shopping expeditions and really bring something home, just for the price of a roll of film?

A large store usually prides itself on its window displays and they are, more often than not, colorful and attractive. When you see a display you particularly like, and we hope you'll be using color film, choose the best angle for the composition you want, beware of reflections on the glass, and shoot! Or, if you feel like experimenting, *use* the reflections on the window to get a more interesting pattern or just to bring in the human element—that woman looking longingly at a Paris creation or a man startled by the latest in sacks. You can go inside a large store, too, without being obtrusive, and there your picture-taking opportunities are unlimited—counter displays, live models in the dress department and, always, the other shoppers.

The small, exclusive dress and millinery shops also have a great deal to offer the picture-taking window shopper. Besides their imaginative displays, you may like a certain dress or hat; why not photograph it from as many angles as possible for dressmaking later?

The windows of small antique shops are perhaps the most interesting for color fans. Sometimes they're jumbled, sometimes orderly, but they're always colorful. The sun shining on colored blown glass, little jeweled objects sparkling, a quaint settee next to a dusty violin—there are as many possibilities as there are shops. Small antique stores usually don't mind browsers either, so go inside, get acquainted with the owner, and *look*. If you use your charm, you might be allowed to do some rearranging for your composition if you fail to see "naturals" around you.

There are as many opportunities for window shopping photographs as there are windows that interest you, so don't forget your camera! But, if you don't happen to be the photographer of the family, take your husband along anyway. He can take pictures of *you* window shopping!—▶



CUSTOMS REGULATIONS

Quite restrictive customs regulations are actually on the books of many countries, even if they are not strictly enforced against the American tourist who is obviously an amateur photographer. There is a good reason for these rules. Cameras and films are highly dutiable merchandise everywhere, and the inspectors at the borders are concerned lest these items be sold or traded within their country. Some of the laws, too, are intended to protect local industry. Many countries have their own photographic manufacturers and their products are a source of tax income to their government.

As the How Much Film Can You Take chart (located elsewhere in this section) indicates, many countries only specify that a "reasonable" amount of film and number of cameras may be carried in. The interpretation of this rule is left to the discretion of the individual inspector. Other countries have more precise rules. France, for example, allows the tourist to carry in two cameras "of different makes," on the assumption that if you carry two Leicas or two Nikons you are probably intending to sell one of them! Thirty or forty rolls of film in your baggage will impress many customs men, particularly those in countries with lower average income levels, as an astronomical amount even for a "rich American."

For most of us, a trip abroad is a picture opportunity which does not occur every year, and if we want to take the equipment and film supplies necessary to make the most of it, a little preparation and an understanding of the rules will enable us to succeed without too much red tape or aggravation.

For picture-making, there is probably no such thing as too much film. Basic supplies for your whole trip may be carried, in many cases, by the expedient of removing from your supplies only the maximum number of rolls permitted by the rules of the country you are entering and having customs seal your remaining film. On leaving, you show this unbroken package. If you need to use additional rolls, try local film similar in characteristics to that you ordinarily shoot. If the sealed package is opened, you will have to pay import duty on all the contents.

On entering some countries with strict rules, you may be asked to post a (refundable) bond or deposit to ensure that none of your equipment remains in the country after you leave. Elsewhere, you may need to file a declaration listing your photographic luggage and be prepared to prove, on leaving, that you are taking out of the country everything you brought in. Under these conditions, if you mail film home for processing, you should be able to show that it was shipped out of the country during your stay.

Many of these requirements will be easier to satisfy if you make inquiries before you leave the United States at the government tourist office or consulate of each country you will visit. Sometimes, you may wangle an extra camera or more film through customs if you have a letter certifying that you are an amateur in the European definition of that word: a "nonprofessional expert."

In most areas this side of the Iron Curtain, you will be well treated by local officials if you remember that you are a guest in the country and that American procedures are no more universal than our prejudices about central heating. In many places, inspection may seem casual and perfunctory — although experienced eyes will be quite aware of what you are "getting away with." The most thorough inspection will probably occur when you re-enter the United States.

You must be prepared, of course, to prove that your cameras, particularly foreign ones, were purchased in the United States. The standard procedure is to register them before you leave. At the Customs Bureau in your port of embarkation, ask for Form 4455 and list all of the equipment manufactured outside the U.S. which you intend to take. You will be asked for a specific departure date, although an approximate one will be acceptable. When you fill out this form, you may be asked for proof of ownership of each article, preferably a bill of sale. (An insurance policy, listing the items exactly by serial numbers, would be an acceptable alternative.) In New York City, Form 4455 is handled at the Office of the Appraiser of Merchandise, Room 211, 201 Varick St., rather than at the Customs House.

If you buy a camera abroad, remember that duty will be charged unless it is included in the $500 exemption which applies to most trips. Be sure, of course, that you have a proper bill of sale which lists the actual purchase price. Remember, when bargain-hunting, that a camera or lens bought abroad will probably not be covered by the kind of guarantee which most importers of photographic equipment provide here. If you discover that the equipment requires adjustment or repair, you may have to pay for this yourself.

The traveler should be aware of other rules, written or not, which govern his photographic behavior abroad. Peace is felt as a precarious balance in some areas, notably along the Iron Curtain and in Israel. Your camera may be politely checked when you enter an airplane or the stewardess will remind you not to use it. Military bases, equipment, power plants or other installations vital to the security of a country may be interesting, dramatic, or picturesque. However, be alert for the significance as well as the arrangement of the landscape. There are times to keep the lens cap on your camera if you carry it at all. Such restrictions apply almost anywhere in the world—what do you think of visitors to the U.S. who aim their cameras at military objectives?

There are a few other regulations you will discover as you go along: you will need permission or perhaps have to pay a fee to photograph inside some museums, require police permission to set up a tripod in public places, particularly if they are crowded. (These regulations are enforced in New York City, too, and in many other places.) The most important of these rules of the game are listed in the notes to the chart on page 146.

The most important rule cannot be legislated. Citizens of other countries are not moving pieces of scenery; they are human, too. Respect their feelings, their language and culture, and their own love of country. Your camera can lead you into unexpectedly warm friendships and understanding.—

CHECK BEFORE YOU GO

Check your insurance. A personal articles floater policy will cover your equipment (and other valuable property) against loss or damage under many circumstances. ☐

List all of the serial numbers on your camera equipment, plus your policy number and the agent's address on a card to carry with you. ☐

Have your cameras thoroughly checked for light leaks, shutter functioning and accuracy, correct synchronization, lens setting and proper focus, accurate adjustment of rangefinder. ☐

Secure a copy of U. S. Customs Form 4455 on which to list *all* foreign-made equipment which you will take. ☐

Stock up on all the film which you are allowed to take into the countries you will visit. Make arrangements with your dealer or a processor to develop the U. S. color film which you will air mail back in small lots as you use it. ☐

If you want to take more film or cameras than regulations permit bringing into the countries you will visit, write the government travel agency or the consulate for a letter certifying that you are an amateur and the photography is for your personal use. (Such a letter may not be available.) ☐

If you plan to remain outside the U. S. for a fairly long stay in one area, get the address of a qualified repair man abroad from the distributor of your cameras. ☐

When Your American Film Runs Out

If you are remaining a week or more in a country and run out of the film which you were permitted to bring in, you may use any of the films listed in the charts with confidence (assuming, of course, that the rolls are in date and have received proper care while in the hands of the dealer). The brands and quantity available will vary considerably from country to country, depending on the rate of exchange and the economic balance between the country of origin and the point of sale.

You will also get good slides from the foreign color reversal films if you expose accurately. It is a good idea to have these processed as rapidly as possible, particularly if you are near the proper facilities. The results from your first roll or two will indicate whatever modifications are necessary for future shooting.

In a great many places you will find familiar labels. Kodak films are manufactured in Canada, France, and England as well as in the United States (although the list of available types is not exactly the same). Films with the same product name, however, may be handled identically. Kodacolor is manufactured only in this country and foreign color negative films lack the built-in color masking layer which make this film so satisfactory. Kodachrome is widely available, but not all countries have processing laboratories. This film, when purchased abroad, includes the processing fee, so if it is brought back undeveloped it should go to one of the Eastman Kodak processing laboratories, rather than to one of the independent processors now handling Kodachrome. (U. S. Kodachrome may, of course, be developed abroad on payment of the fee.)

According to report, supplies of Ektachrome in Europe and Latin America are not quite as large as those of Kodachrome, although it is generally available in the larger cities. There are processing plants wherever Ektachrome is for sale.

Anscochrome is also distributed quite widely now, and there are fair to good supplies in many European and some Latin American countries as well as commercial developing facilities in all cities in which it is sold. There are also over a dozen labs outside the U. S. which handle Ansco's cine color films and these, as well as many plants handling a good volume of still camera film, are availing themselves of the Ansco quality control program.

It is important to develop any color film (particularly the reversal types) promptly after exposure, in hot or damp weather. If you are using one of the foreign-made color films (see list, following), return it promptly to the authorized processing station with instructions to forward it to you at some point along your trip. You may prefer to have it sent back to your home address in the States, or to a friend who will take care of the small import duty on films made abroad. (The disadvantage of this is that you will not see your results and correct small exposure errors while you are still traveling.)

It is an excellent idea, however, to air mail back for processing the U. S. color film you brought along. Return it a few rolls at a time soon after exposure. It should be addressed to your dealer by pre-arrangement (he may provide you with addressed envelopes) or to a friend. International postal regulations require that such packages be 2¾ x 4 inches or larger. To assure free passage for these through U. S. Customs, these must be plainly marked:

Exposed film for processing. Pictures for personal use exclusively—not for any commercial purpose whatsoever.

There is sometimes a 15-cent charge by the U. S. Post Office for handling these packages, even though they are admitted duty free.

Obviously, American-made films should not be slipped into foreign film cartons when they are sent back. The customs inspectors will assume that they are a dutiable import and hold them for payment.

Another familiar label, Polaroid Land, is now more often seen abroad. There are distributors in Sweden and Switzerland, and in Puerto Rico, Havana, Venezuela, Panama, and Mexico, with fair stocks of film types 32 and 42. There are irregular stocks which pop up elsewhere. Canada, of course, has a full supply, comparable to that in the United States.—▶

WHAT YOU SHOULD KNOW ABOUT EUROPEAN FILMS

One or more of these brands (including Kodak films manufactured abroad) will probably be in stock wherever you go in Europe or the Western Hemisphere. Try the nearest equivalent in speed to the American films you prefer.

FOREIGN KODAK FILMS

Made in England (E), France (F), and Canada (C)

(Kodak films with the same product name may be used identically with those of U.S. manufacture.)

BLACK AND WHITE

Film	ASA Exposure Index D	ASA Exposure Index T	35-mm and Roll Films 35-mm	120	620	127	116	616	828	Cine Films (magazines & spools) Double 8-mm	16-mm
Tri-X	200	160	EFC	EFC	EFC	EFC	....	....	EC	....	EFC
Plus-X	80	64	EFC	....	....	....	....	....	....	....	....
Verichrome Pan	80	64	....	EFC	EFC	EFC	EFC	EFC	EFC	....	....
Panatomic-X	25	20	EFC	EFC	EFC	EFC	....	....	....	F	F
Cine Plus-X	50	40	....	....	....	....	....	....	....	....	EF
Super-X	40	32	....	....	....	....	....	....	....	EC	....

COLOR

Film	ASA Exposure Index D	ASA Exposure Index T	35-mm and Roll Films 35-mm	120	620	127	116	616	828	Cine Films (magazines & spools) Double 8-mm	16-mm
Ektachrome, Daylight Type	32	..	EFC	EFC	FC	C	....	....	FC	....	....
Ektachrome, Type F	..	..	EFC	EFC	C	C	....	....	FC	..	.. ....
Kodachrome, Daylight Type	10	..	EFC	....	....	....	....	....	EFC	EFC	EFC
Kodachrome, Type F	..	..	FC	....	....	....	....	....	FC	....	....
Kodachrome Professional, Type A	..	16	EFC	....	....	....	....	....	EFC	EFC	EFC
Kodacolor	32	..	....	EC	EC	....	....	....	....	....	....

SELECTED FOREIGN COLOR FILMS—ROLL AND 35-MM

(See also chart of foreign-made Kodak films.)

Film	Type	Balanced for	Exposure Index* D	Exposure Index* T	Sizes 35-mm	127	120	620	Country of Origin
Adoxcolor Negative Film CNT**	N	D	25	—	x		x		Germany
Agfacolor CN17	N	U	40	32	x		x	x	Germany
Agfacolor CUT18	R	D	50	—	x		x		Germany
Ferraniacolor Negative	N	U	12	12	x	x	x	x	Italy
Ferraniacolor Invertible (Reversal) Tungsten Type	R	T	—	20	x	x	x	x	Italy
Ferraniacolor Invertible (Reversal) Daylight Type	R	D	12	—	x	x	x	x	Italy
Gevaert Gevacolor R5	R	D	25	—	x	x	x	x	Belgium
Gevaert Gevacolor Negative N5	N	D P	25	—	x	x	x	x	Belgium
Ilford Colour Film D	R	D	12	—	x				England
Ilford Colour Film F	R	F	—	—	x				England
Telecolor	N	U	16	16	x		x	x	Switzerland

** Equivalent ASA speeds for use with ASA calibrated meters.*

*** User can process; kits are available. All other color films listed must be returned to authorized laboratories or agencies in Europe for processing.*

R—*Reversal*; N—*Negative*; D—*Daylight*; F—*Flash-type*; T—*Tungsten (3200 K) floods*; U—*Universal*; DP—*Dual Purpose: Daylight and Clear Flash.*

SELECTED HIGH-SPEED BLACK-AND-WHITE FOREIGN FILMS—ROLL AND 35-MM

(All films listed are panchromatic. See also chart of foreign-made Kodak films.)

Film	Exposure Index* D	Exposure Index* T	Sizes 35-mm	127	120	620	116	616	Country of Origin
Ilford HPS	400	320	x	x	x	x			England
Agfa Isopan Ultra	250	320	x	x	x	x			Germany
Ferrania Pancro S4	250	160		x	x	x			Italy
Gevaert Gevapan 36	250	160	x	x	x	x	x	x	Belgium
Perutz Peromnia 25	250	320	x	x	x	x			Germany
Ilford HP3	200	160	x	x	x	x	x	x	England
Adox R23	160	125			x				Germany

* *Equivalent ASA speeds for use with ASA calibrated meters.*

SELECTED MEDIUM-SPEED FOREIGN BLACK-AND-WHITE FILMS—ROLL AND 35-MM

(All films listed are panchromatic. See also chart of foreign-made Kodak films.)

Film	Exposure Index* D	Exposure Index* T	Sizes 35-mm	127	120	620	116	616	Country of Origin
Gevaert Gevapan 33	125	80	x	x	x	x	x	x	Belgium
Adox KB21	100	80	x						Germany
Adox R21	100	80			x				Germany
Agfa Isopan ISS	100	80	x	x	x	x			Germany
Ferrania S2	100	80	x						Italy
Ferrania Pancromatica 32	100	80		x	x	x			Italy
Perutz Peromnia 21	100	80	x	x	x	x			Germany
Gevaert Gevapan 30	64	40	x	x	x	x	x	x	Belgium
Ilford FP3	64	50	x	x	x	x			England
Adox R18P	50	40			x				Germany
Perutz Perpantic 18	50	40		x	x	x			Germany

* *Equivalent ASA speeds for use with ASA calibrated meters.*

SELECTED FINE-GRAIN FOREIGN BLACK-AND-WHITE FILMS—ROLL AND 35-MM

(See also chart of foreign-made Kodak films. All films listed are panchromatic.)

Film	Exposure Index* D	Exposure Index* T	Sizes 35-mm	127	120	620	Country of Origin
Adox KB17	40	32	x				Germany
Adox R17	40	32			x		Germany
Agfa Isopan F	40	32	x	x	x	x	Germany
Ferrania P3	40	32	x				Italy
Ferrania Pancromatica 28	40	32		x	x	x	Italy
Perutz Perpantic 17	40	32	x				Germany
Gevaert Gevapan 27 (Microgran)	32	20	x	x	x	x	Belgium
Ilford Pan F	25	16	x				England
Adox KB14	20	16	x				Germany
Adox R14	20	16			x		Germany
Perutz Pergrano 14	20	16	x				Germany
Agfa Isopan FF	16	12	x		x		Germany

* *Equivalent ASA speeds for use with ASA calibrated meters.*

FOREIGN AMATEUR CINE FILMS

(See also chart of foreign Kodak films.)

BLACK-AND-WHITE—REVERSAL

Film	ASA Exposure Index* D	ASA Exposure Index* T	Sizes	Country of Origin
Perutz Perkine U27	400	...	D8 and 16 S	Germany
Ferrania Pancromatica 37	320	320	D8 and 16 S, M	Italy
Agfa Isopan ISS	100	80	D8 and 16 S	Germany
Ferrania Pancromatica 32	100	80	D8 and 16 S, M	Italy
Gevaert Gevapan 32, Ultra Reversal	100	64	D8 and 16 S	Belgium
Perutz Perkine U21	100	...	D8 and 16 S	Germany
Adox U17	40	...	D8 and 16 S	Germany
Agfa Isopan F	40	32	D8 and 16 S	Germany
Ferrania Pancromatica 28	40	32	D8 and 16 S, M	Italy
Gevaert Gevapan 26, Super Reversal	25	16	D8 and 16 S	Belgium
Perutz Perkine U15	25	...	D8 and 16 S	Germany
Gevaert Gevapan 23, Micro Reversal	12	8	D8 and 16 S	Belgium

* *Equivalent ASA speeds for use with ASA calibrated meters.*

D8—Double 8, 8-mm film; 16—16-mm film; S—daylight loading spools; M—magazines.

COLOR

Film	ASA Exposure Index* D	ASA Exposure Index* T	Sizes	Country of Origin
Agfacolor CUT18	50	...	D8 and 16 S	Germany
Ferraniacolor Cine Invertibile (Tungsten Type)	...	20	16 S, M	Italy
Ferraniacolor Cine Invertibile (Daylight Type)	12	...	16 S, M	Italy
Ferraniacolor Cine Invertible (Daylight Type)	10	...	D8 S, M	Italy
Gevaert Gevacolor R5 (Daylight Type)	12	...	D8 and 16 S	Belgium

* *Equivalent ASA speeds for use with ASA calibrated meters.*

D8—Double 8, 8-mm film; 16—16-mm film; S—daylight loading spools; M—magazines.

WHERE TO SEND FOREIGN FILMS FOR PROCESSING

Arrangements for processing undeveloped color films which are not regularly or extensively marketed in the United States may be made through one of the following:

AGFACOLOR FILMS
Agfa Photo, Inc.
515 Madison Ave.
New York

FERRANIACOLOR FILMS
Monteleoni, Inc.
30 E. 60th St.
New York 22

GEVACOLOR FILMS
The Gevaert Company of America, Inc.
321 W. 54th St.
New York

ILFORD COLOUR FILMS
Ilford, Inc.
37 W. 65th St.
New York

TELCOLOR FILMS
Tellko
Fribourg, Switzerland

ADOXCOLOR
(User-processed; secure developing kit before returning to the U.S.)

HOW MUCH FILM CAN YOU TAKE?

These rules apply to American citizens, amateur photographers, who are bona fide tourists entering the countries on these lists. Professional photographers and others should inquire concerning the regulations affecting them at the consulates of the countries they propose to enter.

While these regulations are the law and can be rigidly enforced, the tourist will often find that they are subject to individual interpretation by the customs inspector—and in many countries interpreted in favor of the tourist.

WESTERN HEMISPHERE COUNTRIES

COUNTRY	NO. OF ROLLS (PER PERSON)	NO. OF CAMERAS (PER PERSON)	SPECIAL RULES
ARGENTINA	*Reasonable number*	*Reasonable number (2)*	B, F
BAHAMAS	*Reasonable number*	*Reasonable number*	
BARBADOS	*Reasonable number*	*Reasonable number*	
BERMUDA	*Reasonable number*	*Reasonable number*	
BOLIVIA	*Reasonable number*	*Reasonable number*	
BRAZIL	*Reasonable number*	*1*	
CANADA	*6*	*Reasonable number*	
CHILE	*Reasonable number*	*Reasonable number*	
COLOMBIA	*Reasonable number (3–4)*	*1*	
COSTA RICA	*6*	*1*	B
CUBA	*Reasonable number*	*Reasonable number*	
DOMINICAN REPUBLIC	*Reasonable number*	*1*	A
ECUADOR	*Reasonable number*	*1 still and 1 movie*	A
EL SALVADOR	*Reasonable number (5–6)*	*1 still and 1 movie*	
GUATEMALA	*Reasonable number*	*Reasonable number*	
HAITI	*Reasonable number*	*Reasonable number*	
HONDURAS	*12*	*3*	D
JAMAICA	*Reasonable number*	*Reasonable number*	
MEXICO	*12*	*1 still and 1 movie*	A, C
NETHERLANDS WEST INDIES	*Reasonable number*	*Reasonable number*	
NICARAGUA	*Reasonable number*	*Reasonable number*	
PANAMA (not Canal Zone)	*Reasonable number*	*Reasonable number*	
PARAGUAY	*Reasonable number*	*Reasonable number*	
PERU	*6*	*2*	*If more may have to pay duty*
TRINIDAD and TOBAGO	*Reasonable number*	*Reasonable number*	
URUGUAY	*Reasonable number*	*Reasonable number*	
VENEZUELA	*Reasonable number*	*Reasonable number*	

EUROPEAN COUNTRIES (AND ISRAEL)

COUNTRY	NO. OF ROLLS (PER PERSON)	NO. OF CAMERAS (PER PERSON)	SPECIAL RULES
AUSTRIA	*$100 worth*	*1 still and 1 movie*	
BELGIUM	*12*	*1*	A, C
BRITISH ISLES	*Reasonable number*	*2*	D
DENMARK	*Reasonable number*	*Reasonable number*	
FRANCE	*10 B&W or 20 color*	*1 still and 1 movie, or 2 still*	D, F
GERMANY (West)	*Reasonable number*	*Reasonable number*	
GREECE	*Reasonable number*	*Reasonable number*	H
IRELAND	*Reasonable number*	*3*	
ITALY	*Reasonable number*	*1 still and 1 movie*	A
LUXEMBOURG	*12 still and 6 small movie*	*1 still and 1 small movie*	B, E
NETHERLANDS	*2 still and 1 movie*	*1 still and 1 movie*	B, C
NORWAY	*Reasonable number*	*Reasonable number*	G
PORTUGAL	*Reasonable number*	*Reasonable number*	
SPAIN	*15 B&W and 15 color*	*1*	A, C
SWEDEN	*Reasonable number*	*Reasonable number*	F, G
SWITZERLAND	*Reasonable number*	*Reasonable number*	
YUGOSLAVIA	*Reasonable number*	*Reasonable number*	G
ISRAEL	*Reasonable number*	*Reasonable number*	B, E, G, J

A. *If additional cameras are brought into the country, a (refundable) bond or deposit may be required: Belgium, based on value of camera; Dominican Republic, uncertain; Ecuador, equal to duty on camera; Italy, 10% of camera value; Mexico, equal to import tax; Spain, up to the value of the camera.*

B. *If more film and/or cameras are carried into the country, a declaration or stronger proof of amateur standing may be required. Serial numbers of extra equipment may be entered in passport by Israeli inspectors.*

C. *Rules are usually interpreted quite liberally in tourist's favor.*

D. *Cameras brought in must be "of different makes."*

E. *No duty is levied if tourist takes out as much film as he brought in.*

F. *No photographs from the air permitted.*

G. *Photography restricted in some areas; Israel, list available at port of entry; Norway, no photos in Kirkenes Pasvik River area; Sweden, no photos of military installations or units, or of power plants in perspective, or any at all in nine restricted areas; Yugoslavia, posts signs with camera symbol and superimposed red X.*

H. *Police permission required to use tripod in public places: England forbids them in large cities, Greece in archeological sites.*

J. *Israel may ask list of sites taken on undeveloped film as you leave.*

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35mm CAMERAS

	USED
Argus A, f4.5	7.95
Argus C3, f3 CRF	19.95
Argus C4, f2.8 1/200th	39.50
Argus C4, f2.8 1/300th	48.50
Argus 21, f3.5	22.50
Bolsey B2, f3.2 Wollensak	17.95
Edinex, f2 Xenon Sync.	29.50
Kodak 35, f3 CRF	22.95
Kodak Retina I, f3.5 Xenar	22.00
Kodak Retina IA, f3.5 Ektar, MX	39.50
Kodak Retina II, f2 RF	47.50
Kodak Retina IIA, f2 Xenon, MX	69.00
Kodak Pony 135, f3.5	12.75
Opema, f2 RF	59.00
Perfex 101, f3.5 Ektar RF	19.50
Robot IIA, f1.9 Xenon	57.50
Stereo Realist, f3.5	54.50
Super Dollina, f2.8 Tessar	44.50
Voigt Vitessa, f2 Sync	69.50

Add post & insurance

35mm SINGLE LENS REFLEX

	USED
Contax D, f2 Biotar	82.00
Exa VX, f2.9 Meritar RF	39.95
Exakta f3.5 Tessar	64.00
Exakta II, f2.8 Tessar preset	84.50
Exakta V, f2 Biotar	127.00
Exakta VX, f2 Auto Biofar	209.50
Praktica FX, f2.9 Victar	49.50
Praktiflex, f3.5 coated Tessar, sync.	39.00

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LEICA — CONTAX — NIKON

	USED
Canon IV, f1.9 Serenar	99.00
Contax II, f1.5 Sonnar	89.50
Contax IIA, f2 Sonnar	147.50
Contax III, f2 Sonnar	87.50
Leica IC, f3.5 Elmar	69.50
Leica IIIC, f1.9 Luxor	84.50
Leica IIIF, f2 Summitar	144.50
Minolta 35, f2.8 Rokkor	59.00
Nicca, f2 Nikkor	79.50
Nikon, f2 Nikkor	137.50
Nikon, f1.4 Nikkor	144.50
Nikon, S-2, f1.4 Nikkor	209.00
Tower, f3.5 Elmar	59.50

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LEICA — CONTAX — LENSES

	USED
35 mm f2.5 Nikkor (Contax)	79.50
35mm f2.8 Canon (Leica)	74.00
35mm f2.8 Schneider (Leica)	59.00
85mm f2 Serenar (Leica)	84.00
85mm f2.8 Steinheil (Leica)	44.50
85mm f1.5 Summarex (Leica)	249.00
105mm f4.5 Britar (Leica)	29.50
127mm f4.7 Ektar (Contax)	39.50
135mm f4.5 Hektor (Leica)	54.50
135mm f4.5 Serenar Non Coupled (Leica)	39.00

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EXAKTA PRAKTICA CONTAX D LENSES

	USED
28mm f3.5 Angenieux	65.50
35mm f2.5 Angenieux	55.50
40mm f4.5 Zeiss Tessar	37.50
90mm f1.8 Angenieux	89.00
135mm f3.5 Tele Colinar	32.50
135mm f4.5 Steinheil	44.50
135mm f4 Zeiss Triotar	39.50
180mm f5.5 Tele-Astra	49.50
250mm f5.5 Tele-Megor	65.50
400mm f5.5 Tele-Megor, NEW	117.95

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16mm PROJECTORS

	USED
Ampro Sound, 1 Case	149.50
Ampro Sound, 2 Case	169.50
B & H Filmosound, 2 Case	189.50
Keystone A-72	57.50
Keystone D-752	39.50
Keystone D-62	49.50
Kodak Kodascope FF	49.50
Natco Sound, 2 Case	149.50
Revere P-48	87.50

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f2.9 ctd Meritar. With waist-level and sports-finder. Interchangeable lenses. Discontinued model.

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Diaphragm in focusing mount for Exakta, Contax D, Praktica, Penta-con, Asahiflex, etc.

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f2.8 coated Zeiss Tessar, 2 sync model, with waist-level and sports-finder. Original factory packing.

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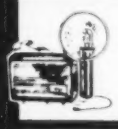

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USED 28.50

Usually 55.50.

1.50 post & handling

PRAKTICA F-X

f2.8 Victar lens; click stops; focal plane shutter, sync for flash and strobe.

BRAND-NEW 53.50

Case 7.98.

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REVERE 88

Hi-speed f1.9 lens; focusing mount; variable speeds; interchangeable lens. Originally 97.50.

USED 39.50

1.25 post & handling

BOLSEY B-2 SYNCHRO

Coated f3.2 lens; speeds to 1 200th; coupled rangefinder. Originally 58.50.

USED 17.95

Case 3.50.

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7x50 Ind focus 18.95*

10x50 Ind focus 22.50*

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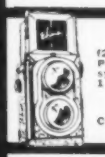

f2.8 Coated Rodenstock; Prontor SVS shutter. MXV synch. Speeds 1 sec to 1 300th.

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Keystone K-55, f1.9 Mag. Turret	87.00
Revere, f1.9 Mag. Turret	99.50
Victor IV, f1.5 Turret	99.00

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8mm CAMERAS

	USED
B & H Sportster, f2.5	39.00
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Cine-Kodak Reliant, f2.7	54.00
Cine-Kodak 60, f1.9	42.50
Dejur Embassy, f1.9	57.00
Dejur Fadematic, f1.9 Turret	92.50
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Revere Ranger, f2.5	34.50
Revere 50, f2.8	34.00
Revere 70, f1.9 Magazine	59.50
Revere 80, f1.9	59.50
Revere 88, f2.5	29.50
Revere 99, f1.9 Turret	67.00

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Ikoflex I, f3.5 Novar	39.50
Kodak Reflex, f3.5	29.95
Kodak Reflex IA, f3.5	34.50
Kodak Reflex II, f3.5	42.50
Korelle, f2.9 Radionar	39.50
Reflekta, f3.5 Sync.	14.95
Rolleicord II, f3.5 Zeiss Triotar	37.50
Rolleiflex Auto, f3.5 Tessar	74.00
Rolleiflex Auto, f3.5 Xenar, M-X	99.50
Rolleiflex Auto, 2.8 C, f2.8 M-X	129.00
Rolleiflex Standard, f3.5 Tessar	39.50
Rigoflex VII, f3.5 Sync.	14.95
Super Argoflex 75, f4.5	19.50

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2¼x2¼ Amato Auto Focus, f4.5	47.50
2¼x3¼ Federal 259 CL, f6.3	42.50
2¼x3¼ Solar, cond. 4.5	64.50
4x5 Printex, f4.5	74.50
4x5 Testrite, f4.5	79.50
5x7 Elwood S-2, f4.5, NEW	79.50

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2¼x3¼ Pacemaker Crown, f4.5, cpld. RF	117.50
3¼x4¼ Ann Speed Graphic, f4.5 cpld. RF	83.50
3¼x4¼ Auto Kalart, f4.5 RF Sync.	99.50
3¼x4¼ Auto Graflex, f4.5	79.50
3¼x4¼ Graflex Super D, f4.5 Auto Diaphragm	119.00
3¼x4¼ Pacemaker Crown, f4.7 cpld. RF	117.50
4x5 Pacemaker Crown Graphic, f4.5 CRF	119.00
4x5 B & J, f4.5 Cpld. RF	79.50
4x5 Busch, f4.5 Cpld. RF	84.50
4x5 Ann Speed Graphic, f4.5, RF, M-X	119.00
4x5 Ann Speed Graphic, f4.5 CRF	89.00

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Nature Nearby

continued from page 115

into the Praktina, watch the animal through binoculars from as much as a mile away, and operate the camera by radio control until he has taken 420 exposures!

Long-focus lenses should hold no terrors for any serious amateur. One thing to remember, however, is that the amount of "wobble" is magnified as the image size is magnified. Hand-holding a camera with a 50-mm lens at 1/25 second is the same as hand-holding at 1/75 with a 150-mm lens, or 1/150 with a 300-mm lens. The longer lenses are seldom faster than *f*/5.6 and bright sun may be necessary to shoot color without a tripod. Ektachrome (exposure index of 32) allows an exposure of 1/200 at *f*/5.6 to *f*/8 in bright sun. Flight shots are usually sharp at 1/200 of a second and sometimes at 1/100, if the photographer is rock-steady and the wing-beat is not too rapid. It's worth a try! It may be necessary to prefocus at a certain distance and wait for the bird to fly into focus before releasing the shutter. Few lenses may be changed rapidly enough to keep an approaching bird in sharp focus.

Food, and water in dry regions, will be the photographer's best envoy in establishing friendly relations with the wildlife community and producing a parade of subjects for his camera. Meat, fish, suet, and table scraps will draw raccoons and skunks. Salt will attract porcupines if there are any in the vicinity. For birds, prepared "Wild Bird Food" sold in supermarkets will be welcomed by the seed-eaters; insectivorous and fruit-eating birds will come to raw hamburger, halves of oranges, cherries, and grapes. Suet and peanut butter are good for attracting woodpeckers, nuthatches, and chickadees. Peanuts themselves are a pet food of jays, grackles, and crows. Corn will draw crows, pheasant, turkeys, and ducks. If any questions arise, check with the local Audubon Society to learn the habits of the particular bird you are after. The book *Songbirds in Your Garden*, by John K. Terres, published by Thomas Y. Crowell & Co., contains much more detailed information about attracting birds.

Bird feeders are very rewarding for the small amount of time required to set them up. Any sort of a tray will serve to hold the bait. Arrange a twig a foot or so above it. The birds often will perch on the twig to survey the scene, and the resulting pictures will not show the feeder if the camera is carefully aimed. Small can or jar lids nailed out of sight to the back side of a branch two or three inches in diameter will prove very useful. In this way you will know exactly where the bird will be sitting when feeding. Often they will turn their heads sideways to keep an eye on the camera and your pictures will show the back, one wing, and a nice head profile. Typewriter ribbon or cellulose-tape cans are ideal for this purpose. Cavities can be drilled in the sides of a vertical dead branch and filled with peanut butter or suet for woodpeckers, nuthatches or chickadees. A branch set into a Christmas-tree holder is excellent, as it may be moved around to keep the sun at a good angle or to avoid a cluttered background.

Generally, the most productive time to photograph mammals is at night. Many are nocturnal in their habits, and are much bolder then than in daylight. When setting up a bait station, try to arrange it so that the animal crosses a patch of soft earth in getting to the bait. This way the tracks will tell you whether you have a raccoon or the neighbor's dog! A camera trap, set off by a trip wire across a trail, will give good results, but requires leaving the camera unattended and at the mercy of the weather. After awhile the animals may start to feed during the late afternoon or early twilight. If so, set up the camera with a flashgun and hide nearby with a remote-control device. When it's too dark to see the bait, you can either pack up the camera and head for home, or stay awhile, and use a flashlight whenever you hear chomping sounds from the bait location.

Patience is a "must" when working with wild creatures, bird and animal alike. A creature's acceptance of a bait station may be influenced by season, daily weather, and availability of natural foods. Observation of your subjects or some simple research may solve your problems or indicate a different bait or baiting technique.

Cloudy days can be productive too. Many flowers have too much color contrast when shot in bright sun, and a hazy or cloudy day will produce much more pleasing pictures. White birds will often register better in both black-and-white and color when shot on a cloudy day. Shutter speeds must of course be slower, and in flower work, wind may be a problem. Some of the best plant photographers travel with a cellophane tent, but a simpler solution is to wait for a calm day or take the flower to a sheltered spot outdoors, or even into the house. Working in the studio is often the only way to avoid distracting backgrounds, and two or three lights should be sufficient, with reflectors if necessary. It's a good idea to use a stand-in for your specimen when arranging lights, or your flower may be wilted and unattractive by the time you're ready to shoot. The white-card method of determining exposure is very useful with any small object. Take a meter reading from a pure white card held in the subject position and facing the camera. Avoid any shadows cast by your hand or the meter and give five times the indicated exposure.

Studio work will often give the best results when photographing beetles, snakes, frogs, etc. Any of these cold-blooded animals may be made quite tractable by chilling them in the refrigerator for five or ten minutes before you're ready to shoot. Don't overdo it! A frozen specimen is no good to anyone. When the creature is set under the lights, you will have a few minutes to shoot before he warms up and becomes too active. With electronic flash much more time is available, since little heat is produced. Whenever you capture a speci-

men, you are morally obligated to treat it humanely and release it after you are through. Nature photography is a fine sport and a method of study. Don't be guilty of making it into a form of destruction.

Prowling around the yard with a camera ready will often pay off. In the early morning, many wild creatures will sit in the sun to warm up a bit, and if you move slowly and cautiously you may get some outstanding shots. The trick is to arouse more curiosity than fear. The mourning dove was photographed from about 15 feet after five minutes' cautious approach—and this during the hunting season, in an area where they are regularly shot!

There are no shortcuts in producing good pictures of nature subjects or any other. Keeping lenses and equipment clean and in good order, extreme cleanliness in processing, and frequent use of a good exposure meter when the light is changing, all will show up in the finished result. When you can make your equipment produce top-notch pictures of everyday objects you're ready to stalk the more wary ones with a good chance of success. Productive techniques developed near home will make the next trip to a National or State Park or game refuge all the more rewarding. Good luck!—▶

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May 11-17

NEBRASKA, Lincoln—(The University of Nebraska); Thirteenth Exhibit.

June 7-21

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MOVIES

Use this method for natural performances in your movies

By LES BARRY

"DON'T just stand there. Do something!"

This statement, when made by the man behind the home movie camera, is usually expected to elicit a series of movements which, when recorded on film, will show the cameraman to be a true master of his art. Unfortunately, the projected result of his filming is often a pretty disappointing business. Frequently, it adds up to reel after reel of smiling friends and relatives, waving deliriously and looking directly into the lens.

The cameraman, with a good bit of money wrapped up in home movie equipment, is perplexed. He's done everything according to the book. His exposure was calculated to record the truest color tones; he's alternated among his normal, wide-angle and telephoto lenses; he's dollied, panned, and even switched fps speeds for variety and humor, and goodness knows there was enough action in each shot to warrant his having used the motion picture medium. Yet, once the thrill of seeing familiar faces on the screen had worn off, his movie was quite a bore.

Where, then, has he gone wrong? Photographically, nowhere. Dramatically, he's missed the boat all over the place. The theory is this—you can't set up your camera, push the release, and expect to record a slice of life, because life is sliced too thin for anything substantial to record itself on a couple of hundred feet of movie film. You have to shoot each sequence so that it will *represent* a complete feature of the everyday world; you have to cram a full gamut of emotional response into every type of action, and in order to do this, your subjects must become actors, even if only in the most limited sense.

In practically every case, the making

of a home movie is a one-man proposition, i.e., the cameraman is his own director and crew. Therefore, the cameraman who spends his movie-making time on shooting alone is doing only half the job. He's ignoring his responsibilities as a director. These are responsibilities to the subjects of his film, as well as to himself and the actual movie.

To begin with, the cameraman-director must impress on his subjects the necessity for ignoring the camera. Since a movie camera on a tripod, with its turret of lenses and its whirring and clicking motor, cannot be readily concealed, the actors must learn to lose all awareness of it, and this is a difficult proposition, because ever since the beginnings of amateur photography it has been the common belief that the camera can't see the subject if the subject can't see the camera. The result has been two generations of lens-lookers, people who cannot comfortably have their pictures taken unless they're looking directly at the camera. And the attitude seems to be, for the most part, that in order to be faithfully photographed they must be smiling. The result in stills is usually a set of amateurish-looking photographs. In movies, it's disastrous, because the movie audience can't swiftly flip over a displeasing picture. It has to sit and watch the entire sequence to its seemingly interminable end, or risk insulting the cameraman and his subjects.

The way to avoid this is to set the camera on the tripod well in advance of shooting. Allow everyone who's going to be photographed to look it over. Then, explain that whenever they look into the camera, during filming, they are going to wind up staring back from the screen, during projection. To avoid this embarrassment, most people will make a studious effort to keep from looking into the camera. But this isn't enough. They must, also, have something to occupy them while they're not looking into the camera. That's where acting and directing come in.

For example, you might be making a simple movie record of a family reunion. Under ordinary circumstances there's nothing as disorganized as a family reunion, and the movie cameraman who simply removes his lens cap and starts shooting at random is wasting time and film on a lot of footage that he'll never have the nerve to exhibit. Instead, take a small group of people (just three or four) to some spot away from the rest of the reunionists. (It's important that you dispense with on-lookers, because there's nothing as disconcerting to amateur acting as on-looking.) Give each of the four a part of play which will tie in with the over-all film. You might start by showing Aunt Jane sitting in her rocker, knitting. Suddenly, she looks up with a start, and Uncle Ed walks on the scene. By the warmth of their greeting, it's obvious that Uncle Ed and Aunt Jane haven't seen

continued on page 157

TIPS FOR DIRECTING ACTORS

1. In giving directions to your actors while the camera is running, be sure to speak loudly. (Their having to turn to you to say, "Huh?" will ruin a sequence.)

2. Anticipate the action when placing indoor supplementary lighting. Have in mind that a sudden blast of bright floods or spots in the eyes when an actor happens to turn his head can destroy his composure—and your scene.

3. Give the actors an opportunity to look over and become familiar with the equipment before you begin to shoot. This will help them to be at ease, and eliminate self-consciousness about the camera, particularly important with young children.

4. Plan your shots in advance of shooting. An air of competence on the part of the cameraman gives the members of the cast confidence in him and allows them to relax.

5. Don't ask anyone to do anything they cannot do easily and comfortably. At best, this would result in an awkward sequence.

6. Be sure to give everybody something to do at all times. Any actor in a scene who is told to look busy, without having something definite to do, will either sneak glances at the camera or be so obvious in his efforts to avoid looking at the camera that he will dominate a scene in an adverse fashion.

Concentration on simple task like serving keeps amateurs from "acting" during filming.

Functional toy will take mind of youthful actor off camera and give him something to do.

CREATING WITH FILM

By CHARLES REYNOLDS

HOW can I make better film, with my movie equipment? It's a short question but it requires a long answer. Your movie camera and editing equipment are just machines. They are designed by their manufacturers to make it as easy as possible for you to make good movies, but they can't do the jobs by themselves. It's up to you to decide the way to use them.

Your movie equipment can be used for three purposes: to record, to interpret, and to create. Usually it's used for two or more of these functions.

The easy way to use your movie camera is *to record*, but the results are not likely to be very interesting. A recording of a party, a wedding or a vacation trip can never be as effective as the real thing. It's only interesting to the people who were, in some way, involved in the events shown. To anyone else it's as dull as the family snapshot album. The camera is a machine which reproduces, coldly and dispassionately, what goes on in front of its lens. It cannot, by itself, convey the feeling or mood of the event. To convey that feeling or mood it must have a viewpoint.

As soon as you begin to make definite decisions as to the angle and distance at which to observe your subject, you are expressing your own personality through the camera. You are giving the camera a viewpoint and using it *to interpret*. You can control the thoughts of your audience by showing them only what you want them to see and no more. The audience becomes involved in the development of the action by being directed to the significant parts of it. By a proper choice of camera position and a careful job of editing you are showing the audience your own personal way of looking at an event. A film like this is much more effective than a recording.

But with hard work you can use your movie equipment to go one step beyond merely interpreting an event. You can use it to *create* meaning and mood by the order and length in which your shots are edited together. This is the most complex and, by far, the most effective aspect of movie-making, for it is in the editing that any good film, amateur or professional, comes alive.

If you can operate your camera, you can use your movie equipment *to record*. The problem is to learn how to use it *to interpret* and *to create*.—

Report on NEW 16-mm Super Anscochrome TUNGSTEN movie film

By ALLAN GREEN

Color movies in available light, long the dream of the amateur movie maker, are now a reality. The problem was solved with the introduction of new Super Anscochrome 16-mm film balanced for tungsten illumination (3200 K). This emulsion has been available to still camera fans for some time now, and since its introduction, it has gained wide acceptance with amateurs and professionals alike.

We had been informed by Ansco that the new 16-mm stock possessed the same characteristics as the still films, and their advice to us was to expose the footage just as though it were in a still camera. When the film arrived we noted that the manufacturer indicated an exposure index of 100, thus making this film the fastest color emulsion ever to be available to the amateur movie maker. Two 100-foot rolls were supplied. For this test we used an H-16 Bolex camera equipped with a 25-mm Ektar f/1.9 lens. All scenes were checked with a General Electric Model DW-68 exposure meter. This meter had been carefully checked against three other meters in conjunction with a positive foot candle light source. Before each scene, the light values were carefully noted and followed accurately. Inasmuch as our supply was balanced for tungsten we had been careful to keep our color temperature at 3200 degrees. To be sure of this, we used a Professional 2-color Temperature meter and maintained this reading wherever possible.

The first test was made in a kitchen. The existing light was a 150-watt Mazda bulb. A color temperature meter showed that the Kelvin reading of this scene was 2800 degrees and we used a Wratten #82C to balance our color temperature to 3200 degrees. Our exposure meter indicated a reading of 1/50 sec at f/1.9 (40 foot candles). With the Bolex film speed indicator set at 24 fps (1/50-sec shutter speed) we exposed about 30 feet of film. Then we raised the exposure index on the meter to 60 ASA and continued to shoot at f/2.5. We compared these readings with a reading based upon ASA 16 which has been the conventional speed

of most color films. At this rating the shot would be impossible.

The results of this first test showed that Super Anscochrome, when rated at a film speed of 100 to 160 ASA renders completely satisfactory results. The colors of the original scene were faithfully reproduced and the screened footage exhibited a full contrast range which we would normally expect with black-and-white films. At the same time, close-ups of color patches were photographed to measure color rendition and these patches were faithfully reproduced.

After the first test we waited for nightfall and went to a mid-town New York street which was well lit. Our exposure meter indicated an f-stop of 3.5 with the film rated at 100 ASA. Our color temperature meter indicated a reading of 2700 deg. Kelvin in most instances.

We shot about 25 feet of the film under these conditions and when the results were screened we were truly amazed. To the best of our knowledge, color motion pictures under night conditions had never been attempted before simply because the general lighting level of these scenes are far below conventional color film requirements. When this footage was exposed, we were concerned with the extreme contrast of the original scene and we wondered if enough image detail would be recorded on the film. When this footage was projected we noted that although the scene was somewhat contrasty, both highlight and shadow areas were recorded faithfully. Incidentally, the lighting ratio of this night scene was approximately 30 to 1, and most rule books tell us that color should never be exposed where the ratio exceeds 4 to 1. We can therefore conlude, that not only does Super Anscochrome film possess high speed, but has also a much greater latitude then any other color film on the market.

The remainder of the film was used to expose to an interior scene which contained normal house lighting. During this period we varied our ASA exposure index so that exposures were attempted at 100, 200, 250, and 400. The color temperature meter gave us a Kelvin reading of 3000 and our incident meter indicated 35 foot candles. Upon examination of this footage, we noted that the scene was a trifle warmer in color. This was due to the color temperature being somewhat below the recommended value. In addition, the walls were of a pale yellow which contributed to the over-all warmness of the scene.

After an examination of the footage, which was shot at the various ASA ratings, we can safely conclude that Super Anscochrome film can be exposed safely at an ASA rating as high as 200 without encountering serious shifts in color quality or extreme underexposure.

The footage exposed according to the higher ASA readings (250 and 400), while yielding an image, was considered unsatisfactory due to the fact that the colors became diluted and increased grain was apparent.

(Further information on exposure and processing techniques appear in the March 1958 issue of POPULAR PHOTOGRAPHY in Bob Schwalberg's report on the new Super Anscochrome tungsten *still* film.)—

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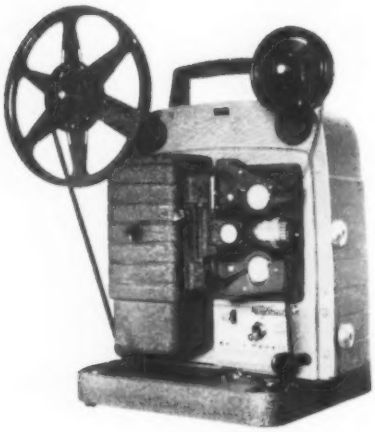
BELL & HOWELL AUTO LOAD



The kind of automata that caught filmers' fancy for the "electric eye" movie camera has now been applied to the projector. Bell & Howell has unveiled an "Auto Load" 8-mm movie projector that takes care of the threading, with hardly any help from the projectionist. All the latter is left to do is to slip a reel of film onto the proper spindle, insert the leader into the projector's channel, and flick a switch.

About three seconds later the leader emerges from the channel, ready to be routed around a roller and attached to the take-up reel. Here's how it works.

Two movable film guides, closed when threading starts, form the necessary loops. However, when the projectionist has hooked the film leader onto the take-up reel, the pressure on the roller opens the film guides, freeing the loops. At any time during the show should a loop be lost, just press down for a moment on the top of the film guide, and the loop is restored.

When a film is threaded for the first time into the Auto Load, the end of the loop may have to be trimmed. The machine has a built-in cutter for that.

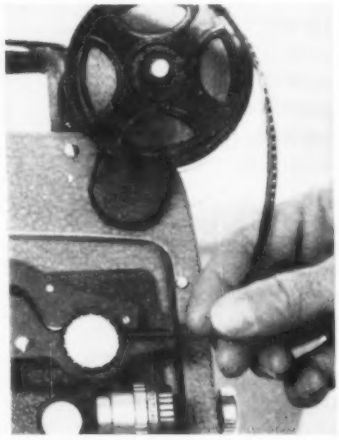
One question that comes to mind is, can the threading channels damage the film surface? To prevent just that, they have been recessed so that they won't contact the image area.

Except for the film guides, the Auto Load looks and works a lot like the more advanced models in Bell & Howell's Monterey line. Like those in that line, it has been built right into its die-cast aluminum case with lift-off side cover, and with swing-out enclosed gear arms that take reels up to 400-ft capacity. Similarly, too, it runs strictly at 16 frames per second, and has provision for reverse run, power rewind, framing, and a simple screw-controlled spring-balanced front tilting leg.

Optically, there is a difference. The Auto Load's in-line projection system uses the 500-watt Tru-Focus lamp. According to B&H, the result is a 20-percent light increase over that produced by a conventional 500-watt projection bulb. Lens equipment is either a standard 1-inch $f/1.6$ anastigmat or the Filmovara lens. The latter is a zoom lens with a variable focal length from 15 to 20 mm, allowing the image size to be adjusted within limits without moving screen or projector. The lens is focused by turning a knob, and is set in a swing-out mount. Open it up and you can clean the gate aperture and pressure plates quite conveniently.

The projector operates on line currents from 105 to 130 volts, 60 cycle a-c only, and has been factory pre-lubricated. Price, with the 1-inch lens is $129.95, with the Filmovara lens, $149.95.

All in all, the Auto Load promises new showmanship to filmers who fumble.

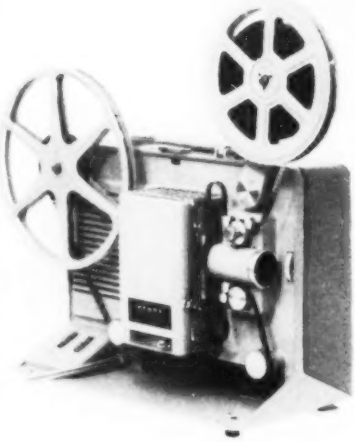


INSERT END of the leader into the guide's mouth, and the film is on its way through the projector's gate without further handling.

FEATURES

- Projector is built directly into die-cast aluminum case, with lift-off side-cover.
- Folding gear-driven reel arms handle up to 400 feet of film.
- Auto Load threads film automatically, restores loops without interrupting projection.
- Three-position switch controls lamp and motor.
- Projection speed is 16 frames per second, with provision for showing individual frames, reverse run, and power rewind.
- In-line optical system avoids light loss by reflective surfaces, employs 500-watt Tru-Focus lamp.
- Screw-lock releases and fastens spring-loaded front tilt leg.
- Shuttle framing adjusts position of film at aperture without risk of moving image off screen.
- Lens equipment is either a standard 1-inch $f/1.6$ anastigmat or Filmovara zoom lens with adjustable focal length from 15 to 20 mm.
- Lens mount swings out for convenient cleaning of film aperture and pressure plates.
- Mechanism has been factory pre-lubricated for minimum maintenance, operates on 105 to 130 volts, 60 cycles a-c.
- Made by Bell & Howell, 7100 McCormick Rd., Chicago 45. Price, with 1-inch $f/1.6$ lens, $129.95; with Filmovara lens, $149.95.

ARGUS M500



A radical departure from traditional movie projector design is featured in an 8-mm model introduced at the Chicago show by Argus Cameras, a newcomer in the cine field. Heart of the M500 is the Tru-Flector lamp, developed by Argus' parent organization, Sylvania Electric Products, Inc.

The Tru-Flector, reported in the April issue of POPULAR PHOTOGRAPHY, incorporates a curved mirror within its glass sleeve, designed to aim the light output of the filament so accurately that a 150-watt lamp can rival the performance of a conventional 500-watt projection system with its bulb, back-reflector, and condenser lenses. How does the Tru-Flector principle work in the M500?

The Argus projector has a delightful low-slung streamlined appearance. Its 150-watt bulb requires a small impeller-type blower for cooling, permitting designers to cut down on both bulb and weight (10 lb, 11 oz without reel).

Light output of the M500 should satisfy normal home requirements. It will illuminate the popular 40-inch-wide beaded screen for satisfactory showing of color film. Illumination is remarkably even, without patches. Fall-off at the corners is 50 percent or, in photographic terms, equal to half an f-stop. The difference isn't even noticeable. The 22-mm $f/1.5$ lens can throw a really sharp image.

The simple Tru-Flector optical system has permitted the manufacturer to keep the price down—to $89.95—yet incorporate a lot of features. These include reverse and still operation, power-rewind, and inter-connected lamp and motor switches that permit the blower and film transport to work independently, yet won't let the lamp be turned on unless it is blower-cooled, safeguarding its life.

Threading of film is conventional, with one exception: the front gate is completely removable, and is held in place with one strong pressure spring, and two light side springs which are also in-

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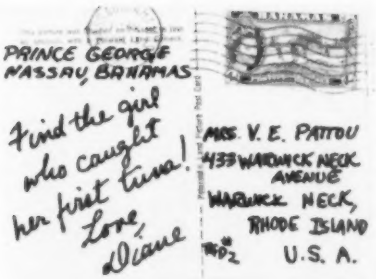
POLAROID POSTCARDERS



HOW often during past vacations have you stood at the hotel's rotating postcard rack trying to make the difficult decision of whether to send your friends an exciting view of a solid brass cannon or an inspiring likeness in stone of the local hero on horseback? For those of you who own Polaroid Land cameras, the vacation postcard future looks brighter indeed. The Polaroid Corporation has come to the rescue with what they call "Postcarders." These are simply postcards the size of the Polaroid picture, which have a peel-off back covering a sticky surface to which your Polaroid on-the-spot-vacation-picture can be easily and permanently attached.

Now you can plan, create, and produce vacation picture postcards to show your friends high points of the trip. You, yourself, know what interests them most, and rarely do you find a standard postcard that's more than merely adequate.

People are friendly on vacations and usually flattered to be of help, so if you're traveling alone, have some other vacationer shoot you for postcard posterity.

Include a little of your own personality along with the usual "having a wonderful time." Have some fun and ham it up. Pose in front of the local jailhouse while wishing they were there. Or, as demonstrated above, prove your fishing boasts. Send doubting Thomases pictures of yourself playing tennis, swimming, sailing, and even water skiing. Another possibility—you can pick up a little spare cash on vacation by shooting and selling personalized photographic postcards of other vacationers.

The Polaroid Postcarders come 25 to a pack for 95 cents and can be found at any camera store.—*Diane Pattou*

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ARGUS M500

continued from page 154

tended to maintain correct tracking of the film. A double-toothed claw controls movement of the film past the gate aperture; a sliding framing knob in front of the lamphouse adjusts its position.

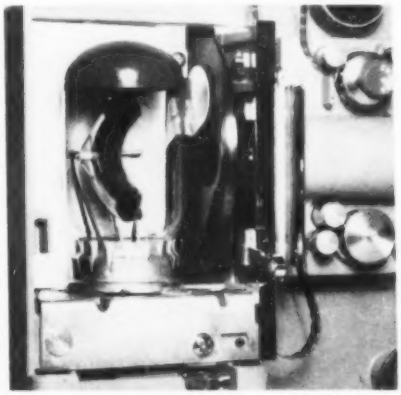
A shifting lever underneath the lamphouse controls forward, still, and reverse operation. When the projector is set for still, a perforated metal disk drops in front of the bulb's light beam, warding its heat from the film, as well as cutting down light transmission considerably. To reverse the film run, the shifting lever is moved hindmost. To rewind the film, a knob at the upper sprocket is pulled outwards, the film is freed from sprockets and gate, and the shifting lever is again placed in its hindmost position. Rewind is really rapid, taking only about 100 seconds for 400 ft of film.

The M500 has an induction-type motor, running on a-c only. Speed, as might be expected, is strictly 16 frames per second. Lubrication is taken care of at the factory. The pre-production model we examined behaved quite noisily; company officials assured us that regular M500s wouldn't.

The projector has been built into its own vinyl-finished die-cast aluminum case with slip-off cover. Despite its compact size there is a special compartment for storing the line cord, and there is even room for a 400-ft take-up reel. The belt drive is internal, and there is really nothing that interferes with the projector's streamlined appearance.

FEATURES

- Projector is built into vinyl-finished aluminum case with lift-off side cover.
- 150-watt Tru-Flector lamp eliminates need for external reflector and condensers, provides illumination equal to conventional higher wattage systems.
- Low-wattage power sources requires only light impeller-type blower, keeps size of unit down to 7 15/16 x 10⅝ x 5½ inches, weight, less than 11 lb.
- Folding spindle arms accept up to 400-ft capacity reels.
- Separate motor and lamp switches are interconnected, so that blower and film transport work independently, yet lamp won't operate unless blower runs, thus safeguarding its life.
- Single shift-lever sets projector for forward, still, or reverse run, also controls rapid power rewind.



150-WATT TRU-FLECTOR lamp is the entire light projection system in the Argus M500.

- Forward speed is 16 frames per second only.
- Belt-drive system is completely enclosed.
- Front part of film gate is removable for cleaning.
- Screw-threaded front leg provides tilt.
- Sliding framing knob adjusts position of film in front of gate without affecting position of image on screen.
- Semi-wide-angle 22-mm. f/1.5 lens is set in spiral mounting for focusing by rotation.
- Machine is pre-lubricated. Induction-type motor operates on 105-125 volts 60 cycles a-c.
- Made by Argus Cameras Div. of Sylvania Electric Products Inc., Ann Arbor, Mich. Price, $89.95.

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What does "The Crowd" mean to you? Will it be a patterned mass of humanity or a solitary figure representing the "lonely crowd"? The result is up to you, so interpret the theme as you wish. Avoid the cliches, and go out to get a picture that will stand out from the hundreds of other entries. Remember, it's "The Crowd" as seen through your eyes and your camera.

We will pay $25 for each picture selected to appear with Angus McDougall's photograph. Be sure to mark all prints —preferably 8x10 glossy black-and-whites —on their reverse sides with your name, address, and any pertinent technical data.

Prints will *not* be returned, so do not include postage. The contest is open only to black-and-white prints—no color slides or prints can be accepted. Send your entries now to **CHALLENGE!** POPULAR PHOTOGRAPHY, One Park Ave., New York 16, N. Y.—

Make Them Act

continued from page 151

each other for some time. With this simple bit of acting, you've got the start.

Now, before Uncle Ed and Aunt Jane have an opportunity to look toward the camera and ask, "What's next?" you motion to Cousin Millie, who is standing just out of range of the camera, to enter, be greeted by Uncle Ed and Aunt Jane, and present her aunt with a bouquet of flowers. Finally, along comes Uncle Walter, who kisses the ladies, shakes hands with Uncle Ed, and you stop filming.

The entire scene may have lasted for two minutes, but in your completed film it's going to play a vital part, because it introduces the subject matter, and sets the tempo for the acting. It's going to look perfectly casual—a real slice of life.

Now then, we know that none of the people in the sequence are really actors, but by manipulating them you've made them play their parts with the necessary naturalness. How have you manipulated them? Very simple. You've given each of them something to concentrate on, and you've got them concentrating so hard on it that they haven't time to think about being stiff. For instance, you told Aunt Jane that no matter what happens she must hold onto her knitting, and hold it in such a manner that it will be always in full view of the camera. While concentrating on doing so, she's been very afterthoughtish about everything else, so she hasn't had a chance to freeze up. You told Uncle Ed to keep from looking toward the sun at any cost if he would avoid squinting and being photographed unflatteringly; you told Cousin Millie that regardless of what happens she must keep from touching anyone with the flowers, and told Uncle Walter to recite some silly nursery rhyme from the time you signaled him to enter the scene.

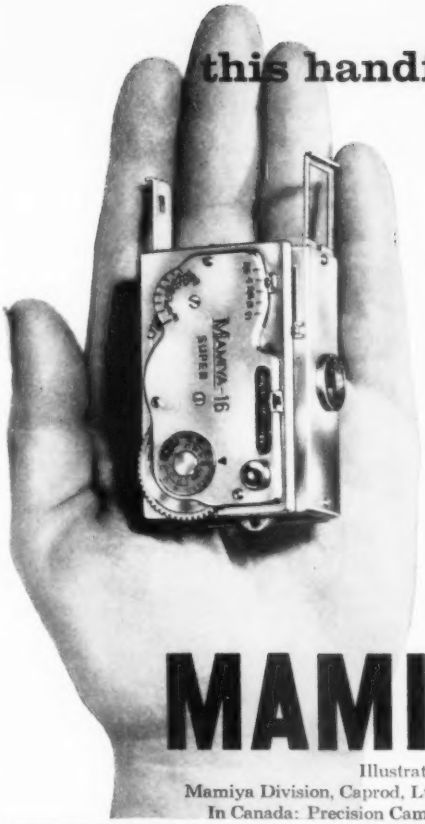
With this, each of the actors has something to concentrate on other than the camera, and by playing them against each other with a bit of humorous conflict (Aunt Jane keeping her knitting in view; Cousin Millie keeping from touching anyone with the flowers) you've involved them in a tight-knit action.

Now that these four have experienced ignoring the camera, you can introduce a couple of additional people, giving them, too, bits of business to concentrate on.

If the crowd gets big enough to be unwieldy, have a few actors step out.

Soon, everybody at the party has been introduced without looking into the camera.

Next, try another situation, being just as deliberate as you were in the introduction. But now, you have to get tricky. For example, when lunch is served, everybody will be sitting down at the table at the same time. Some other method of diversion must be found for such a situation, and that's where the trickery comes in. Say there are ten people at the table. Use the number system. In advance, you explain to three people that when you shout "one" they're to turn and talk to the people on their respective lefts; that at the count of "two" they're to start eating the first course; and at the count



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of "three" they should all ask for the bread at the same time. Tell three others that at the count of "one" they're to begin eating; at "two" to ask for the bread, and at "three" to speak to their neighbors to the right. Tell the remaining four that at "one they should unfold their napkins and smooth them on their laps; at "two" to speak to the people across from them, and at "three" to start eating. The final direction to each person is that except when their numbers require them to speak to specific people they're not to do any talking unless addressed directly.

Set up your camera; shout "one," and as soon as all eyes are off you and occupied with following directions start shooting. After a minute or so shout "two." A couple of minutes later shout "three." The resulting sequence will be the typical confusion and babble that goes on at a large luncheon, with people trying to concentrate on following directions and still answer when addressed directly, and you'll have a perfect shot of lunch. What's more, you won't have missed more than the first course yourself.

With a few sequences like these, you'll have created an entire movie story of your family reunion without a trite frame and with more natural looking pictures.

The summing up is this. With small groups you can give each person in the film a specific task to concentrate on and, by not acting, they'll act for you. For large groups, provide organized confusion with each individual concentrating on a specific thing to accomplish.

Your biggest gratification will come when, during the projection, the actors (now turned audience) starting asking, "When did you take that?" Just smile, smugly, and remind them that the camera was in full view at all times.—

Pictures Afloat

continued from page 93

underway it is necessary to have a fairly fast craft capable of keeping up with your subject and allowing additional speed to maneuver to the best vantage point. An outboard motor boat can be quite suitable but they are apt to be wet and some shelter for your equipment is desirable. A more seaworthy boat is needed for action shots in very rough water. Spectacular pictures of large racing sailboats are often possible if you can arrange to be aboard one of them. Such views can be nicely composed by using portions of the boat you are on in the foreground. Closeups of people doing things on boats, enjoying themselves, or working hard to win a race can also be taken best when on board. Shooting in the confined area of a small boat is, of course, always difficult. The best solution is a camera with a wide-angle lens.

Let's assume that you are going to take some shots of boats underway and you are working from a small power boat. In photographing a sailboat the leeward side (the side that is heeled over toward you) is the preferred view. If the light is coming from nearly the direction the boat is headed but a little more to the leeward, the effect will be extremely nice. The foreward parts of the sails will be in light and taper off into shadow thus giving a fullness to the sails and perhaps a pleasing shadow of the jib or rigging across the mainsail. If the sun is behind the boat an interesting backlighted view can be obtained with sparkling highlights on the water and a pattern of seams in the sails with light shining through. Views from the windward side of the vessel are not always as desirable as leeward views but often the lighting will be better for that side. Since the mast will be leaning away from the camera it will tend to be foreshortened in a broadside view, hence it is better to shoot from further forward or further aft, thereby accentuating the heel of the boat. All of this applies when the boat is sailing *on* the wind. When a boat is sailing *before* the wind (wind coming from astern) the crew may have set a spinnaker, a large balloon-like sail that is particularly photogenic from many angles.

A power boat is considerably easier to photograph. It looks more or less the same on either side so you just pick the side that is in the light. Preferably the bow of the boat should not be shaded and if the windshield area is to show in the picture it is better that the light be coming from somewhat ahead. While you would probably stop your boat or slow down considerably to photograph a sailboat, the power boat will be easier to shoot when you move along with her at the same speed.

Shooting pictures quickly from a moving boat may present some difficulty to composing in the viewfinder. Much of this can be done when printing, especially when working with square negatives, and many different ideas for composition may be realized after the negatives are processed. However don't lose the boat in the negative area; you will want to be fairly close to the subject when shooting.

The one element of composition in most all boat photographs is the horizon line dividing the picture in two parts. Generally this should appear about one third of the distance from the bottom of the viewfinder. A good many boat photographs are taken from about six feet over the water—the height of your camera when you stand on a medium-size boat. At this level the horizon line in a sailboat picture comes just over the sheer of the boat or between the deck and the sails. It is my personal opinion that this is an unfortunate place to divide the picture; it seems to disturb the lines of the vessel and confuse whatever activity there is on board. Shooting from a higher position would be better, but my own choice is to shoot from an extremely low angle whenever possible. I lean over the side of my boat and hold the camera two or three inches above the water. This is quite awkward of course and it requires the type of camera you look down into rather than hold at eye level, but the low angle gives a much more flattering perspective to the hull, making it appear to loom up out of the water. When shooting by this method you will probably get spray on your camera. When this happens be sure to wipe the camera immediately. Water, and particularly salt water, will corrode and ruin a camera if this precaution is

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not taken. When the cameras are not being used, it is a good idea to keep them in a plastic bag sealed with a rubber band. This will help protect them from the damp, corrosive salt air.

Anyone taking pictures of boats from another boat should keep matters of safety and courtesy in mind at all times. A knowledge of the rules of the "road" and the rights-of-way of sailing craft over power boats is a must. The photographer should take special care that the wake or stern wave from his boat does not cause a sailboat to heel suddenly or spill the wind from the sails. His wake could capsize a small boat and the operator of a powered craft is legally responsible for any such damage.

If we assume that you are photographing boats as you see them underway rather than by appointment, it is a good idea to ask the people aboard if you can take photographs. Or, just tell them you are going to take pictures but make it clear what you're up to before starting all sorts of maneuvers around them. Never cross the bow of a boat underway without first getting permission. Head-on views must necessarily be pre-arranged to some extent.—

Zoo Close-Ups continued from page 84

be hand-held at 1/50 or even, with a very steady hand, at 1/25 second.

Good zoo pictures require large amounts of both time and patience. The waiting isn't bad, especially for those who enjoy watching animals. The zoo creatures are very amusing and often have disturbingly human characteristics. Some are natural hams that seem to put on special efforts for the camera.

I'll often spend an entire Sunday afternoon hanging around the monkey island, a fancy housing-project for the lower primates usually equipped with a jungle gym and all the other paraphernalia for monkey-business. The monks can be counted upon for a good show—everything from a family squabble over an orange peel to an impromptu swim in the moat. The rapid-focus feature of my Novoflex makes it possible to follow their unpredictable spurts of action.

In going for outstanding animal pictures there are a few rules worth remembering. When looking for good action, don't forget that animals react to each other. Watch them carefully and be ready to catch the action when it comes. At the Detroit zoo the tigers are displayed in an open area which is separated from the spectators by a deep crevice and a sheer wall. I was waiting for a picture when I noticed that a tiger was cautiously stalking one of his companions who appeared to be half asleep in the shade of a tree. By being prefocused and ready, I was able to catch their ensuing tangle.

Another thing to remember is that feeding time will usually offer some interesting pictures. On a hot afternoon the animals will get sluggish, but about an hour before feeding time, they start to perk up and take a new interest in life. When the keeper comes around with their food, they really get excited.

It's not wise to whistle or make loud noises to attract an animal's attention. This is more likely to frighten them. But I have found that some animals will respond to a soft, unfamiliar noise and will even come to investigate. I usually make a kissing noise with my lips or a clucking with the tongue. (This also attracts the spectators' attention as well.)

Always be ready for the unexpected when making animal pictures. I was watching the penguins one day when one suddenly twisted his head over at an odd angle and went after a flea that was chewing on him. The resulting picture showed a penguin without a head.

All zoos encourage both amateur and professional photographers, but some to a greater extent than others. For example, Chicago's Brookfield Zoo conducts an annual photo contest. A tip to contestants: Avoid sending in pictures of polar bears. They have been overdone in past contests and have a slim chance of winning.

The director of the National Zoological Park in Washington, D. C., Dr. Theodore Reid, encourages picture-taking but offers this advice to camera fans. Stay on the right side of the guard rail unless you have specific permission to get closer to the animals. Remember that they are not tame and at best all animals are unpredictable. In some instances, I have gone into their cages (by special permission) and made pictures, but I'd say that all of my best shots were made from the spectator's vantage point.

Dr. Reid also cautions photographers against exciting the animals in any way.

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Zoo exhibits without bars may be found in the following cities. Cages and enclosures have not been *completely* eliminated at these zoos, but they offer many open animal exhibits.

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San Antonio, Texas
San Diego, Calif.
Seattle, Wash.
Washington, D. C.

In all situations, obey the keepers and attendants since your safety and the animals' welfare is their responsibility. Above all don't be a comedian and toss a used flashbulb into the open mouth of a hippopotamus. Some people might think it's funny, but actually it could be fatal to the animal.

If you're in the mood to take some pictures, why don't you try the zoo this Sunday? You'll never find another spot with so many free models. And be sure to stop at the monkey island. You'll probably find me waiting there with my Novoflex, contemplating my Congo cousins, and looking for that picture of a lifetime to electrify some picture editors.—

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Underwater Pictures

continued from page 90

feet. Remember when you're underwater, all distances appear less than they actually are. So make all exposures with the Shark at the distance your eyes see as eight feet to avoid out-of-focus pictures caused by being too close to your subjects.

Aiming the Shark and composing your pictures requires a special procedure to avoid cutting off portions of the picture. In holding the viewfinder against your face mask, the slightest movement in any direction will alter greatly the physical limits of the picture you want to get.

You can avoid this by the following method. First, view the subject with the finder held against the mask, allowing space on all four sides of the subject. Then, extend your arms full length (being certain not to bring the camera closer than eight visual feet to the subject), place the peep sight in the center of the subject matter, and squeeze the release. This will prevent you from tipping the camera in any direction.

When shooting action pictures underwater, such as a school of fish or other skin-divers, learn to wait for the instant just past the peak action when the motion temporarily subsides. Your pictures will be much sharper.

To get a good color underwater, I recommend using Super Anscochrome with an ASA rating of 100 in depths to ten feet. From 10 to 20 feet, increase the rating to ASA 200 and remember to mark the rolls shot at this speed so that they can get special processing. If you do your own color processing, compensate for the increased speed by giving 50 percent more time in the first developer.

continued on page 174

TIPS ON USING THE MAKO SHARK

1. Before using the camera, clean the front lens cover with a soft tissue or soft, lint-free cloth. Remember that plastic scratches more easily than glass.

2. When screwing the back on after loading film, do not tighten excessively or you'll have a difficult time removing it the next reloading. To insure easy removal of the back, spread a thin coat of vaseline or lubricant on the "0" ring or grommet, located inside the forward part of the case. This will reduce friction, also provide a waterproof seal.

3. Be sure that the camera is dried before opening, and then open it by turning the two parts slowly while pressing them toward each other.

4. Remember that when shooting underwater everything is magnified about 25 percent and that your vision and conception of distance are similarly distorted. But don't worry about compensating for this, because your camera lens will also "see" and record this degree of magnification.

5. After using the camera in salt water, give the exterior a thorough washing with fresh water before storing. Dry carefully with a towel, and never leave it in direct sunlight or near excessive heat.

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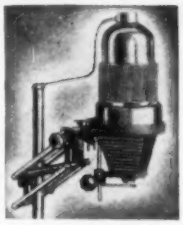

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LATEST 1958
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REG. $450.00 Used
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With 50mm F1.2 Canon High Speed Lens

BRAND NEW
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A REVOLUTIONARY
NEW LENS SYSTEM
BASIC PIESKER LENSES

FOR Exakta, Pentacon, Praktica, Praktina, Leica, Contax, Nikon, Canon, Exakta 66, Hasselblad, Miranda, Asahi Pentax, 16mm Movie Cameras.
ALL PRESET AND CTD.

New 7 Element Wide Angle Lens
35MM F2.8 PRESET
- Razor Sharp
- Ctd. & Color Corrected

Value $99.50 NOW 57.50

85mm F2 Piesker $48.95
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180mm F5.5 Piesker 38.95
250mm F5.5 Piesker 58.95
400mm F5.5 Piesker 96.95
400mm F4.5 Piesker 129.50
Extra Lens Adapters 57.50
(One lens may be used on several cameras by changing adapters.)

BRAND NEW LATEST 1958
SOLIGOR "66"
With F3.5 Preset lens
Reg. $99.50 NOW 59.95
Deluxe Case $8.50

BRAND NEW
NIKON S-2
with 50mm F2 Sonnar Lens
199.50
Eveready Case & BC Folding Flashgun ..... add $17.95

BRAND NEW LATEST 1958
Automatic Tele Focusing
Novoflex Follow Focus Lenses
For Exakta, Pentacon, Praktica, Praktina, Contax S & D, etc. ...

	REG.	SALE
240mm F4.5	$249.50	$147.50
300mm F5.6	256.50	153.50
400mm F5.6	279.50	177.50

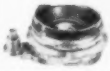
BRAND NEW—Discontinued
Konica III MFX

69.50
Deluxe Case & BC Folding Flashgun $16.95

Brand New Latest Automatic
Exakta VX

43.50
Plus Your old Exakta VX (Body for Body)
Single Flash Post Model

GO AUTOMATIC!
fully automatic
BIOTAR 58mm F2



49.50
Plus Your Preset Biotar

35mm F3.5 Auto Travegon $39.50+your w.a. lens.
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50mm F1.9 Auto Xenon $59.50+your F2 Biotar PS.

Soligor
135mm F2.8
Preset Lens
For Exakta, Exa, Pentacon, Contax S & D, Practica
REG. 89.95
NOW 29.50 Used

Deluxe Case $6.50

BRAND NEW LATEST 1958
Rolleiflex 3.5 G
with Meter

95.00
Plus your LVS Rollei.
Rollei 2.8 E with Meter
110.00
Plus Your Rollei 2.8D

ROLLEI ACCESSORIES

Filters, f3.5	2.95
Filters, f3.5G	3.95
Filters, f2.8	4.95
Rolleikin 35mm Attach.	21.50
Rollei Plate Back Set	27.50
Rolleinar-Par Set 3.5	12.50
Rollei Meter	14.50
Zip Grip	2.95
Rolleicord Case	8.00
Rolleiflex Case	10.00

ABOVE ARE USED

SAVE UP TO 50%
ALL BRAND NEW

	REG.	SALE
Vitessa "L" F2.8	$139.50	$83.70
Vitessa "L" F2	159.50	95.70
Vitessa "T" F2.8	154.50	92.70
Vito IIA, F3.5	54.50	27.25
Case & BC folding flash add		12.50
35mm F3.4 Skoparet & case	85.00	51.00
100mm F4.8 Dynaret & case	85.00	51.00
Turret Finder	23.00	16.25

BRAND NEW LATEST
1958 AUTOMATIC
Practica FX-3 outfit

Reg. $246.00 now 119.50

HERE'S WHAT YOU GET!
- Brand new Praktica FX-3
- Optical Waist Level & Sports Finder
- 50mm F2.8 Automatic Westenar Lens
- 100mm F4.5 Telephoto Lens
- Extension Tube Set for Close-ups
- BC Flashgun • Leather Case

Above outfit available with 50mm F2.8 Automatic Tessar or F2 Automatic Westagon Lens. Add $19.50

Zeiss Eye Level Penta prism for Praktica FX3 ..... $19.50

BRAND NEW AUTOMATIC
Pentacon outfit

Regular 413.20
NOW 147.50

HERE'S WHAT YOU GET!
- Automatic Pentacon
- Prismatic Viewfinder
- Strobe & Bulb Synchronization
- 50mm f2.8 Automatic Westanar Lens
- 135mm f3.5 Preset Telephoto Lens
- Extension Tube Set for Close-Ups
- Pentacon BC Flashgun
- Leather Case

FREE EXPOSURE METER

50mm F2 Automatic Westagon or 58mm F2 preset Biotar instead of Westanar, add $14.50

BRAND NEW LATEST
Exa mx outfit

REG. 216.50
NOW 88.50

HERE'S WHAT YOU GET!
- New Latest EXA MX
- 50mm f2.8 ctd. Westar Click-Stop Lens
- Penta Prism Finder
- Split-Image Rangefinder Insert
- Extra Ground Glass Insert
- 100mm F4.5 Telephoto Lens
- Exa B.C. Flashgun
- Leather Case

50mm F3.5 Zeiss Tessar instead of Westar, add $12.50
50mm F3.5 Automatic Primotar instead of Westar, add $32.50

SPECIAL!
40mm Zeiss Tessar W.A. lens. Reg. $85.00 . now $29.50
40mm Meyer Helioplan. Reg. $54.50 ..... now $19.50

BRAND NEW
JUST DISCONTINUED
Exakta vx outfit

REG. 461.00
now 227.00

HERE'S WHAT YOU GET!
- Exakta VX
- 58mm F-2 Biotar Preset Lens
- Eye Level Penta Prism Finder
- Rangefinder Insert
- Extra Ground Glass Insert
- 135mm F3.5 Preset Telephoto Lens
- Exakta Extension Tube Set for Close-ups
- Exakta B.C. Flashgun
- Leather Case

FREE Exposure Meter

Latest Exakta IIA instead of disc. VX add $29.50

SPECIAL!
Fully Automatic 58mm F2 Biotar instead of Preset Biotar add $39.50
Fully Automatic 50mm F1.9 Xenon instead of Preset Biotar add $49.50

BRAND NEW LATEST 1958
ASAHI PENTAX OUTFIT

REG. 379.50
NOW 189.50

HERE'S WHAT YOU GET:
- Brand New Asahi Pentax Camera
- Eyelevel Penta Prism Finder
- 58mm F2 Preset Biotar Lens
- 135mm F3.5 Preset Telephoto Lens
- Extension Tube Set for Close-ups
- Carrying Case
- B.C. Flashgun
- Free Exposure Meter

Save $130.00 Brand New Latest 1958
LATEST AUTOMATIC **Praktina FX outfit**

Reg. $329.50
NOW 199.95

- Automatic Praktina FX Camera
- 50mm F2.8 Automatic Tessar Lens
- Waist Level & Scientific Finder
- 135mm F4.5 Telephoto Lens
- Extension Tube Set for Close-ups
- B. C. Flashgun
- Leather carrying Case
- Free Exposure Meter

58mm f2 Auto Biotar instead of f2.8 Tessar, add $39.50

BRAND NEW **Retina IIIC**

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now 98.50
Retina 11C $79.50

SPECIAL
RETINA REFLEX 138.50

Deluxe case & B.C. folding flash $16.95
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ULTRABLITZ COMET
with Lifetime Nicad battery
Reg. $54.95
Now 34.95

Used

BRAND NEW
Electronic Flashguns

	Reg.	Sale
Ultrablitz Supreme	199.95	119.50
Ultrablitz Reporter	194.50	89.50
Ultrablitz Jet II	89.95	49.50
Ultrablitz Rocket WL	124.95	74.50
Graflex Strobomite	64.50	42.50
Braun Bobby Automat	104.00	69.50
Ultrablitz Matador HS	124.50	72.50
FR II, AC & Battery	54.50	34.50
FR 140	29.50	22.50
Mecablitz 300	59.50	37.50

BRAND NEW
PENTAPRISM
GENUINE IHAGEE

For Exakta and Exa cameras, with rangefinder glass and leather case.
Reg. $85.00 NOW 36.95
Rangefinder Insert Alone $8.75

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Yashica "A" with case	Special 23.19
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Yashica "LM" w/meter & case	Special 45.49
Yashicamat automatic, w/case	Special 58.49

K-20 AERIAL CAMERA
Fully guaranteed!

K-20 with 6¾" f4.5 lens with 5-rolls 5¼" x 20' Super-XX 2-filters, and case for camera. **79.95**

AEROFLEX DEVELOPING OUTFIT

For processing of Aerial Film (K-20), 5¼" to 9½" wide x 20' long. Complete with three tanks. Gov't cost $102. **39.95**

Special Combination Offer . . .
K-20 Camera Outfit and Aeroflex Developing Outfit, both outfits for only.... **109.95**

8mm & 16mm B&W MOVIE FILM
Guar. till Jan. 1959 • Processing Included

SIZE	TYPE	3 for	6 for	12 for
8mm x 25' Dbl.	Super X	3.29	6.39	11.29
8mm x 25' Dbl	Super XX	4.49	8.39	16.29
16mm x 50' Mag.	Super X	5.69	11.29	22.49
16mm x 100' Roll	Super X	6.29	11.89	22.99
16mm x 100' Roll	Super X Sound	7.49	14.49	28.29
*16mm x 100'	Tri-X Neg.	3 for 4.19	6 for 7.99	
*16mm x 100'	Negative Super-X	3 for 2.79		
*16mm x 1200'	Neg./Super-XX	2 for 13.99		

*Processing not included.

ROLL FILM
Color • Black & White Guaranteed till Jan., 1959

SIZE	TYPE	QUAN.	PRICE
120, 620, 127 116, 616	Super XX	10 rolls	2.29
120, 620	Ektachrome Aero	6 rolls	2.69
120, 620	Infrared 100 ASA	10 rolls	3.29

35mm COLOR
Guar. till Jan. 1959

SIZE	TYPE	QUAN.	PRICE
35mm x 20 exp	Ansco Color Day or Tung.	5	3.99
35mm x 50'	Ansco Color Daylight	1 roll	7.49
35mm x 40'	Ektachrome Day. Aero ASA 32	1 roll	4.39

(FREE: 6 empty Cartridges and cans with bulk film)
1½ gal. Ektachrome Processing Kit.....$1.95

KODACHROME
828 1956 Date Outdoor or Indoor
59c each E.K. Proc. Incl.

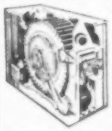
16mm x 100' "A" 1957. Orig. pkg.
6.75 ea. 3 for 19.19 E.K. Proc. Incl.

KOPY KAT SPECIAL!
Microfile 35mm x 36 exp.
10 for 1.99

K-24 Aerial Camera

Brand New—Unused—Guar. Perfect. Complete with 7" f2.5 Kodak Aero Ektar lens, filters and magazine.
+ 6 rolls of 5½" x 26' Super XX film (1957 date) for use with K-24 camera. Gov't cost $529. **99.49**

A-10 Electric Film & Paper Dryer



- For drying roll film or paper up to 10" wide x 215' long.
- Warm filtered air blows against emulsion surface
- Handles over 350' per hour

Motor Driven **199.00**
Gov't cost $1,290.

MORSE B 5 Film Developing Machine

3 stainless steel tanks, reel assembly, self reversing. Motor operates on 110 volts A.C. Film capacity: up to 9½" wide, 200' long. . . only **159.99**

35mm x 100' SAFETY FILM
Guaranteed till Jan. 1959

Super XX, Plus-X
Panatomic-X
Ansco Supreme
Infrared, Microfile
Orthochromatic ASA64
2.49 EACH

Positive 35mm x 100'.....1.50
35mm x 100' Daylight Bulk Loader w/12 empty cartridges & cans.....5.39

35mm x 100' new, latest emulsions
Guaranteed till Jan. 1959

- PLUS-X ASA 80
- TRI-X ASA 200+

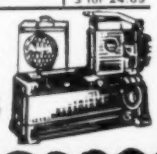
3.29 each

35mm x 100' Daylight Bulk Loader with 12 empty cartridges and cans.....5.39

VARIGAM or VARALOID
Guaranteed till Jan. 1959

4 x 6	DWSM	250 sh.	4.59
5 x 7	DWGL or DWSM	200 sh.	4.99
5 x 7	DW Silk	100 sh.	3.69
8 x 10	SW Lustre	100 sh.	3.49
8 x 10	DW Silk	100 sh.	5.49
8 x 10	SWSM	100 sh.	3.69
8 x 10	SWGL	100 sh.	4.39
8 x 10	DWSM	100 sh.	4.99
10 x 10	SWSM	125 sh.	3.79
9⅝" x 400'	Resisto Rapid	1 Roll	8.99

AMPRO 16mm Sound Projector



2-piece outfit includes: 750 W. lamp, 10 inch speaker, 2" f1.6 lens, amplifier, motor. 100-120 volts, A.C.
Value $475 **159.95**

Fresh KODACHROME and ANSCOCHROME
In original mfrs. packages • 1959 Date

Sizes	Kodachrome	Anscochrome
35mm x 20 exposures	3 for 4.59	3 for 3.69(R)
35mm x 36 exposures	3 for 6.19	
35mm x 28' with loader		7.95 each
8mm x 25' roll	3 for 5.99	
8mm x 25' mag.	3 for 9.19	
16mm x 100'		3 for 24.69

ENLARGING PAPER
Guar. till Jan. 1959
KODABROMIDE • HALOBROME • CYKORA

Size	Type	Contrast	Quan.	Price
3½x5	DWSM	#2	500 sh.	4.99
4x5	DWSM	#2	250 sh.	4.99
5x7	DWGL	#2	200 sh.	4.99
8x10	SWGL Lustre	#3	100 sh.	3.29
8x10	DWGL	#1	100 sh.	3.69
8x10	SW Res Rap.	#2,3	100 sh.	3.29
8x10	SWGL	#2,3,4	100 sh.	4.29
8x10	SWSM	#1,2,3 4	100 sh.	3.59
8x10	DWSM	#2 3 4	100 sh.	4.99
8x10	SW Brovira	#1	100 sh.	2.29
8x10	SW Portraya	#2	100 sh	3.99
11x14	DWGL	#1,2,3	50 sh.	4.49
40"x30'	SWGL-SWSM	#1,2	1 Roll	4.49
40"x30'	DWSM	#2,3,4,5	1 Roll	6.99
9⅝"x200'	Res. Rapid	#1,2,3,4	1 Roll	4.89

9⅜" x 200' AERO ENLARGING PAPER **4.89** 2 for 8.99
#1, 2, 3, 4
Case of 20 rolls 85.00
Roll cuts into 240 sheets 8x10.

CONTACT PAPER
Guar. till Jan. 1959
KODAK • HALOID • ANSCO

Size	Type	Contrast	Quan.	Price
4x5	SWGL	#1,2,3,4,5	300 sh.	2.69
5x7	SWGL	#1, 2, 3	200 sh.	3.19
7½x7½	SWGL	#1,2,3	250 sh.	3.89
7x9	SWGL	#3	100 sh.	2.19
8x10	SWSM	#1,2,3,4	200 sh.	3.69
8x10	DWSM	#1,2,3,4	100 sh.	2.69
8x10	SWGL	#1,2 3,4	100 sh.	2.89
8x10	Ad Type	#3,4	250 sh.	3.29
8x10½	Reflex Copy		200 sh.	2.99
10x10	Document	#2,3,4	144 sh.	1.50
10x10	Resisto	#2,3	250 sh.	3.19
11x14	SWGL	#0,1,2,3	50 sh.	1.79
10x20	Resisto	#1,2,3,4	100 sh.	3.29
17x22	Reflex Copy E		100 sh.	6.99
18x22	Ad Type		100 sh.	5.99
8"x300'	SWGL	#2	1 Roll	7.49
9½"x200'	SWGL	#3	1 Roll	4.99

FREE
With your order for $5 or more ask for roll of our Super-XX film. Specify 127, 120 or 620

EKTACHROME "B"
In original mfr. pkgs. 1957 Date
4 x 5.....10 sh. 1.99
50 sheets.....7.69

TERRIFIC BUY!
Ansco Printon • 1957 Date
11 x 14 10 sh. **6.95** Fully guaranteed

70mm FILM
70mm x 15' Tri-X In orig. Casette, ready for use....3 for **2.99**
70mm x 100' Plus-X, Tri-X, Sup.-XX **3.49**
70mm x 200' Plus-X, Super-XX **6.49**

Brand New! 8 x 10 Graflex Holders **3 for 18.49**

AERIAL FILM 1955-56
5¼"x20' Super XX, Tri-X, Infrared.....1.50
5½"x26' Super-XX.....1.50
7"x15' Super XX.....2.25
9½"x75' Super XX.....7.50
9½"x200' Super XX..22.00
9½"x390' Super XX..35.00

CUT FILM
4x5 Comm'l Ortho, Super Ortho Press, Ansco Color Day.. 100 sh. 6.49; 20 sh. 2.99
8x10 Contrast, Process Pan and Process Pan 50 sh. 2.99
11x14 Comm'l Ortho 20 sh. 3.29

MORSE G-3 TANK
Develops up to 100' of 8, 16 or 35mm film. Uses ½ gallon of solution. FREE, with tank, 6 rolls of 16mm x 50' Blue Base reversal or 3 rolls of 8mm x 25' dbl.

Special **25.99**

Special Purchase! SALTZMAN ENLARGER

Model 30 WAA (Air Force B-9)
- Precision engineered
- Takes negatives up to 10¼" x 10¼"
- Takes Aerial Roll Film up to 9½"
- Electric foot operated shutter
- Heavy duty construction assures absolute rigidity
- Complete with Coldlite fluorescent lamps and 8 x 10 negative holder

Gov't Cost $2,500.
999.00
Crating extra

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of cameras & supplies.
Lists thousands of big buys. Fully illustrated.
only **10c**

SUPREME BUYS-OF-THE-MONTH
Follow this section each month for sensational values in . . . . . .

Brand New Cameras and Equipment

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	List	Special
Aires 111L, with case	112.95	74.99
Konica III, with case	137.25	89.99
Ricoh, with case and flash	59.95	44.99

SUB-MINIATURES

Minolta, with case	39.95	29.49
Ricoh, with case	39.95	29.49

Revere 8mm Cameras & Projectors

*CA-1, single lens	139.50	104.49
*CA-2, 3-lens turr.	169.50	128.49
*CA-4 Magazine	199.50	149.99
P-777 Projector	127.50	91.49
B & H No. 253A 8mm Proj.	69.95	52.99
Brumberger No. 1503 8mm proj.	45.90	38.99

* All with electric eye

35mm (2 x 2) Slide Projectors

Revere 888	144.50	99.99
Brumberger No. 1311	59.50	44.99
Quick Set Super 300	69.95	46.99

Projectors supplied with case

Darkroom items and accessories

4x5 E.K. stainless steel hangers (6)	9.60	4.49
4x5 Fidelity C.F. holders (12)	39.89	29.99
8x10 Brumberger Paper Safe	7.95	5.95
11x14 Speed-Ez-El	9.95	8.75
Hugo Meyer Range Finder	4.95	3.95
	9.95	3.99

NEW YASHICAS — JUST RELEASED
As seen at the Chicago Photo Show

Yashica No. 127 Reflex, w/case	69.95	45.99
Yashica 8mm Model 8S, f1.9	49.95	33.99
Yashica 8mm Model 8T, f1.4	79.95	52.99

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MINIMUM ORDER: $4.
Merchandise is guaranteed U.S. Surplus, unless otherwise noted. Export and wholesale inquiries invited. Include 25% deposit for C.O.D. orders. Minimum C.O.D. order: $20.
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It is a well known fact that UNIVERSITY CAMERA sells factory boxed camera equipment at tremendous discounts; obviously, certain factory boxed equipment is returned for concealed damages during the year (which of course, is not our fault, you'll agree . . . however, we repair or replace it at no charge).

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KODAK PRODUCTS

All Brand New

	SALE
Film Cleaner w/ Lubricant 4 oz.	.89
Pocket Viewer $2.50	1.82

For Retina IC, IIC, IIIC

Microscope Kit, R $62.50	49.92
Platform B $5.25, 50-80 Sports guider $8.25	4.29
Close Rge Viewfdr Kit B	6.88
50mm Lens Hood, 35-80 Optical Fdr. $15.50	29.73
Rotary F1 w/Sp Brak	12.08
	9.99

Kodak Accessories

Kodak Super Slide

Ready-Mts. Box 100	2.46
Ready-Mts. Box 500	10.00
Ready-Mts. Box 1000	19.00
Stereo Viewer I	10.26
Stereo Viewer II	18.92
Koda slide 400 File	4.42
Slide Kit $3.95	2.87
Signet 500 $77.50	57.86
Signet 500 Automa. $87.50	67.22
Lens Cleaner	.72
Madal 8mm Turr f/1.9	118.79
Brownie 300 8mm	47.11
Showtime 8mm Var.	99.82
MagneticOpticPag.	666.67
Film cement	.57
Master 8x10	236.67
Darkroom Lamp $4.75	3.59
Model B Lamp Kit	1.69
2-way Safelamp $7.10	5.57
Adjs. Safelite Lamp $9.50	7.69
Utility Lamp ±C $15.00	11.92
Hobby Outfit devel. $10.75	8.62
Hobby Outfit Dlxe $18.25	13.87
Hobby Print Box $8.75	6.84
Ektach Proc. Outfit ±2	23.94
DBle Print Roll ea.	3.82
Ferrotype Polish	.79
Blotter Roll—6"	2.68
Film Clips .35c	.29
Day Load Tank 35mm	9.29
Kodacraft Roll—Tank	2.68
or Miniature Tank	2.68
Illuminator ±1A	11.67
Color Densit Mdl ±1	63.27
Funnel	.87
8 oz grad.	.59
16 oz grad	.79
32 oz grad	1.48
Thermometer D	.48
Stirring Thermom.	2.48
Tank Therm	1.39
Paddle, Stirrg.	.29
Color Thermom	2.94
Process Thermom.	8.82
Kodak Timer $10.50	8.25
Cloth Cable release	.98
Lens Paper	.15
Rotary Flash for Signet 30, 40, 50 Pony II, IV Duaflex	8.57
Color Handbook	3.99
Automatic Tray Siphon, $4.95	3.78
Portrait Meter $4.95	2.92

USED BARGAINS

	SALE
Kod REFL f/3.5 L.N.	39.95
Altiflex REFL f/3.5	19.95
Kodak Monitor f/4.5	19.95
Claris f/2.8	9.95
Minicord f/2 L.N.	99.95
Certo Doll f/2.8 Tes New	44.50
Robot Royal f/2.8 L.N.	129.95
DEJUR REFL L.N. f/4.5	29.95
Soligor REFL Semi-Auto L.N.	34.50
Flexaret f/3.5	19.00
Bantam Spec f/2 L.N.	59.95
Retina IB f/2.8 L.N.	29.95
Nicca f3.5 Elmar	49.95
Alpa REFL f/1.8 L.N.	109.50
Kodak 35 RF f/3.5	34.50
Exacta 1 w/f/2 Bio	69.95
Edixa F/2.8 RF	29.95
Argus C3	19.95
Vitessa L f2 L.N.	67.50
Rolleicord III	49.95
Rolleicord IV L.N.	69.95
Ikoflex 35 Tess LN	39.95
Voigt Perkeo I	19.95
Exakta V f/2 Bio	99.50
Argus A4 3.5	9.95
Weltini f/3.5 Elmar	69.95
Kodak Pony f/4.5 L.N.	18.75
Ciro 35 f/4.5 L.N.	19.95
Ikonta III L.N. f/4.5	49.95
2¼x2¼ AN Sp f/4.7 EKT compl w/Flash, RF, Hold	59.95
Iloca II f/3.5 RF	40.00
Speedex 2¼x2¼ f/4.5 L.N.	19.95
Steeky w/FL	18.95
Condor I f/3.5 RF	24.50
Duax 3.5 RF	59.95
Super Baldinette f/2.8 Xenar	34.50
Polaroid 80	41.92
Super Ans Regent 35 New	63.22

8mm CAMERAS (Used)

DeJur FADTUR 1.9	89.95
Revere 40 f/2.8 L.N.	49.95
Revere 40 f/2.5	57.50
B&H 172 f/2.5 L.N.	84.50
B&H 172 Tur. f/1.9	109.50
Emel 1.9 (No Tur.)	29.95
Key K 13 Mag f/2.5	53.00
Key oly f/2.5	48.00
DeJur Spec Turr. f/1.9	85.40
DeJur 3-Turr. Versa. L.N.	67.50

16mm CAMERAS (Used)

Kodak 16 Mag. f/1.9 L.N.	69.50
DeVry f/3.5	29.95
Simplex f/3.5 mag	19.95
Keys K51 f/1.9 L.N.	110.00
Revere f/2.8 mag	49.95

ELECTRONIC FLASH (Used)

Dormitzer DB-1	29.95
Blau pun Kt.	19.95
Braun Hobby 100	49.95
Heiland V	32.50
Braun Paxtron New	27.50
Mightylite	34.50
Hershey Sunlite	29.95
Ultrablitz comet New	
Lumax L.N.	14.95
Dormitzer Zenber New	72.00
Ultrablitz Jet	36.95
Braun Hobby Stand	32.00
Ultrablitz side light	19.97
Mecablitz 100	

All items listed below are brand new

Allow approximately 10.00 for cases, as items are listed without. We will charge or refund overage.

16mm PROJECTORS

Kodascope Sound	631.42
Kodascope Royal	*** **
B&H 385	*** **

All items listed below are brand new

	SALE
B&H 16mm Proj.	*** **
B&H 302 Sound	*** **
Revere Sound	228.62

35mm CAMERAS

Kodak Pony IV	28.68
Kodak Signet 40	52.90
Kodak Signet 30	39.46
Kodak Signet 50	58.90
Kodak Stereo	63.80
Konica III MXL	83.57
Vitessa L f/2	107.50
Vitessa f/3.5	69.95
Vitessa L f/2.8	103.50
Vitessa T f/2.8	114.22
Vito BL f/3.5	56.72
Vito B f3.5	42.75
Vito BL f2.8	56.72
Vita IIA f3.5	43.22
Tanack f2	102.50
Super Baldina f2.8	42.27
Super Ikonta III	68.00
Super Ikonta IV	99.92
Super Regent f3.5	65.84
Super Memar f2	89.22
Anseo Memar f3.5	28.95
Ricoh 500	43.27
Ricoh 35, case, f	39.95
Samoca f3.5	21.97
Samoca 35X	28.41
Samoca 2.8	36.27
Robot Royal f1.9	178.50
Realist 45	62.50
Stereo Realist f3.5	92.50
Prominent f2	168.21
Prominent f1.5	194.50
Retina IIIC	98.50
Retina IIC	82.50
Retina Reflex f2	139.95
Praktina FX1 f2.8 aut	122.68
Praktina FX f2.8 aut	164.82
Praktina FX f2 aut	205.60
Praktica f1.9 aut.	96.60
Praktica f2.8 aut.	96.60
PAX M2 f3.5	31.95
Petri f2.8	35.95
Pentacon PB f2	188.21
Pentacon f2	149.50
Olympus Wide S f2	94.21
Olympus 35S f1.8	85.91
Olympus f2.8	45.92
Nikon SP	*** **
Neoca IIS f3.5	36.95
Minolta Super A f2	87.50
Minolta A2 f2.8 w/c	56.46
Minolta A	35.92
Mamiya Mag. 35	*** **
Leica M-3 f2	456.00
Leica M-3 f3.5	363.00
Leica IIIG 3.5	244.50
Exakta VX f2	159.95
Exakta VX IIA F2	215.00
Exakta VX IIA 1.9	224.50
Exakta VX	122.25
Exa f2.9	87.21
Konica MXL w/c	86.72
Edixa Reflex f2.8	135.00
Contina IIA f2.8	*** **
Contax IIIA f1.5	*** **
Contax III-A	*** **
Contax IIA f2	*** **
Contaflex IV f2.8	*** **
Canon VT	*** **
Century 35	49.95
Leica 3G 2.8 Elmar	273.00
Contaflex I	95.00
Contaflex II	116.00
Ikoflex IC 3.5 Tessar w/case w/meter	82.50
Ikoflex IC 3.5 Novar w/case w/meter	69.50
Wollensak 1500 Tape	137.50
Wollen Stereo T1515 Tape	163.70
Wollen 715 8mm 750 Proj	112.70
Contaflex III f2.8	*** **
Aires III-L f1.9	69.00
Asahi Pentax	146.50
Argus C-44	72.98
Argus C-3	39.95
Argus C-4	62.98
Akarex 700 f2.8	*** **
Ambi Silette f2.8	*** **
Akarex III f2	99.50
Akarex 700 L	*** **

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Revere 553	58.92
Revere 888	103.60
Revere 888D	113.05
Viewlex Prot-O-Matic	58.50
Viewlex Power-Matic	84.50

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Signet 500	55.42
Signet 300	47.20
Mansfield Midway 300	24.95
Ansco Dualet	29.35
Argus 500	57.30
Argus 300	29.18
Graflex Constel	*** **
Brumberger Rocket	39.00
Brumberger Riviera 2¼x2¼	39.00
B&L Balomatic 300	64.95
B&L Balomatic 500	109.50

2¼ x 2¼ CAMERAS

Yashica A w/case	25.90
Yashica C w/case	38.61
Yashica Mat w/case	59.95
Yashica LM w/case	49.95
Minolta Autocord	72.50
Ikoflex Ib	67.50
Ikoflex Favorit	*** **
Super Ricohflex	20.65
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Rolleiflex 2.8E	*** **
Rolleiflex 3.5G	*** **
Ricoh Diacord G	33.92
Ricoh Diacord L	48.51
Mamiya C f2.8	*** **
Kalloflex	*** **
Kalimar Reflex	69.95
Exakta 66 f2.8	169.95
Flexarette	19.95
Minox IIIS L.N.	88.50
Minicord L.N.	59.95
Mamiya 16	32.50
Ricoh Golden 16	29.95
Polaroid 110A	*** **
Polaroid 150	*** **
Polaroid 95B	*** **
Polaroid 80	54.50
Linof 4x5	*** **
Linof 2¼	*** **
Rolleiflex 4x4	*** **
Miranda 1.9	135.00
Soligor 66	69.95

8mm MOVIE CAMERAS

Keyst K-41 MAG.	72.00
Keyst K-32	54.00
Brownie Tur. f1.9	61.72
Brownie f1.9	35.42
Brownie f2.7	21.78
Bell & Howell	*** **
Bauer 88B f1.9	115.62
Kodak Medal. f1.9	84.57
Kodak Medal. Tur. f1.9	114.65
Revere 64 f1.9	119.24
Revere 40 f2.5	72.22

8mm PROJECTORS

Kodak Brownie 300	46.80
Kodak Brownie 500	56.60
Kodak Showtime Var	94.22
Bauer T10	146.22
B&H 8mm Proj.	*** **
Revere 777	92.00
Revere 85	83.70
DeJur 750	112.50
DeJur 1000	118.95

16mm MOVIE CAMERAS

Kodak Royal f1.9	142.01
Kodak K-100 Tur. f1.9	222.26
Kodak K-100 f1.9	*** **
B&H	*** **
Revere C-37 f1.9	144.50
Revere C-102 f1.9	144.50

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Weston DR	12.10
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Walz Coronet	7.50
Walz Corona	7.50
Walz Color Meter	28.90
Alpex	4.95
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Sekonic Leader Del.	6.95
G.E. P.R.1	18.24
Sixtomat X-3	19.95
G.E. Guardian	23.80
Norwood Director S	21.98
Seconic 121	10.78
G.E. Dynacel	5.92
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6169 Monkland

Montreal 28, Que., Canada

Write for prices and trades

Trays For All PROJECTORS W/COVERS

28c ea.

Except Revere or B&L

Wollensak electric eye 8mm roll F1.8 84.00
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CA4 . . . . . 149.50

SPECIAL! BRAND NEW! WOLLENSAK 8mm TURRET

Model '43' Movie Camera with F1.9 Ctd. Raptar, 9mm W.A., 32.5mm Tele Elements!

List 99.50!

ONLY

$61.72

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AKAREX III w/F2 XENON

- Full Sync MX
- Cpl RF
- Rapid Wind
- Sync Comp.
- Interchangeable
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L.N. 59.70

Brand New R.F. Pentaprism for Exactas, V, VX, & Exas., split image rangefinder combination with viewfinder. Complete with extra ground glass. List 80.00 Brand New 18.98

Case 99

Photo-Electric EXPOSURE METER WITH BOOSTER

Complete ASA index, Lens stops F 1 to F 32, shutter speeds 30 sec. to 1/1000 sec. Complete with Booster, Leather case and Chain.

Reg. $12.95

$6.75

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135mm f/3.5 Telephoto lens. Rangefinder. Coupled, in black anodized mts. List 79.50 **38.95**

Same for Leica M-3 . . . . . 44.50

AIREQUIPT MAGS	New $2.25	Our Price $1.49
Trays for Revere Automatic Proj.	1.45	.79
Case (holds 30 Airequipt mags)	15.95	7.49
Case (holds 12 Airequipt mags)	9.50	3.95
Case (holds 12 Revere mags)	11.95	5.49
Case (holds 30—6" LaBelle trays)	15.95	7.95
Case (holds 24 trays for Revere, TDC, Airequipt, Viewlex)	13.95	6.87

MODEL 2700 Superpod

Geared for quick action raising and lowering
Extra 90 Degrees tilt on panhead
Ball Level on tripod
Ratchet to prevent camera from falling
Degree marks for vertical pictures
Adjustable camera screw
List 22.95
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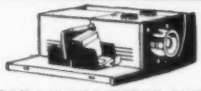

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List 74.50 with Airequipt changer. Spec. w/c. new . . . **53.92**
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Battery operated 3⅞" in width, 8½" in length. lightweight. 1 hour recording. A must for business execs., sales managers, reporters, radio, TV, on-the-spot interviews, insurance investigators, etc.

Trade-ins accepted. Free Literature.

List 249.50

Special Brand New $159.50

incl. bat. mike, earphone & tape.
Send for free Brochure.

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135mm F-3.5 Pre-set Telephoto for Exakta Eltar. List $69.95 New **29.95**

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Bell & Howell, Victor, Ampro
SPECIAL $159.00

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8x10 or 10x10 HALOID VARALOID
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SINGLE WEIGHT GLOSSY, 100 sheets ..... $ 4.25
3 for 11.95
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SUPER SPECIAL, small size ENLARGING, at TWO CENTS to a PENNY per sheet
Single weight—semi-matte 1 and 3

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5x7	$1.95	$4.35
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3x5	...	2.25

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50′ 8mm ..... $ 1.00
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400′ 16mm (sound) 10.00

CLOSEOUT on used 16mm subjects, app. 400′ SILENT or SOUND.

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16mm SILENT OR SOUND, app. 400′ reel, runs app. 15 minutes. 8mm, approximately 200′ reel, running time app. 15 minutes.

CHARLIE CHAPLIN:
Full version 2 reels—8 or 16mm
IN THE BAND, NITE AT THE SHOW, THE CHAMPION, THE TRAMP, HIS NIGHT OUT, DOUGH AND DYNAMITE.
FULL VERSION ONE REEL—8 or 16mm
CHARLIE CHAPLIN
NEW JANITOR! MABEL'S BUSY DAY, FILM JOHNNY, BETWEEN SHOWERS, CAUGHT IN THE RAIN, HIS NEW PROFESSION.
GRANTLAND RICE SPORTS
RUNNING THE SCALES, SPORT AFLOAT? GRIDIRON GLORY, BULLS EYE, SUN AND SNOW, SELF DEFENSE, MONARCHS OF THE FIELD, SON OF SWAT.
OUR GANG, HAL ROACH COMEDIES, MACK SENNET BATHING BEAUTIES — 16mm silent or sound, 8mm One or 2 reels
SPECIAL PRICE:
16mm silent, per reel $10.00
16mm SOUND, per reel 12.50
8mm 5.00

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OUR GANG, HAL ROACH COMEDIES, MACK SENNET BATHING BEAUTIES — 16mm silent or sound, 8mm One or 2 reels
SPECIAL PRICE:
16mm silent, per reel $10.00
16mm SOUND, per reel 12.50
8mm 5.00

8mm MOVIE COLOR FILM 16mm

Includes PROCESSING & ret. postage

8mm
COLORCHROME
8mm roll ASA 32 ..... $3.25

ANSCO COLOR FILM
8mm 25′ dbl. roll $2.25
8mm 100′ on Bolex spool 6.50

16mm
ANSCOCHROME ASA 32
100′ 16mm roll $8.00
50′ 16mm magazine 6.50

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16mm 100′ roll $5.00
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16mm KODACHROME
100 ft. rolls—processing included. Slightly outdated. Developed by Eastman Kodak. Reg. $10.00. Price **$6.00** per roll.

DEVELOPING SERVICE

100′ 16mm B&W $1.25
8mm 25′ double B&W ..... .60
8mm 25′ double color 1.25
16mm 100′ roll color 2.50
16mm 50′ mag. color 1.25
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PROCESSOR

8mm-16mm Cine Film

100′ capacity—tray, drying rack, processing reel, complete instructions, 1 gallon capacity. Only **$24.50.**
8mm-16mm-**Movie Titler.** Make your own titles. Only **$4.95.**

16mm SOUND PROJECTORS
Bell & Howell, Victor, Ampro
SPECIAL $159.00

BULK MOVIE FILM

(black & white) ASA 50
supplied wound on CAMERA SPOOLS

8mm
4 25′ double 8mm on camera spools ... $ 1.79
16 rolls as above 5.95
64 rolls as above 22.00

16mm
15 rolls 16mm 100′ on camera spools ... $17.95
27 rolls as above 29.00
54 rolls as above 48.00

BULK supplies on cores:

8mm
400′ 8mm or 16mm ..... $ 3.50
15 16mm 25′ rolls 2.75

16mm
27 rolls as above 4.75
54 rolls as above 8.75
15 16mm 50′ rolls 5.95
27 rolls as above 10.75
54 rolls as above 19.50
Bulk Film does NOT include processing

8mm MOVIE COLOR FILM 16mm

Includes PROCESSING & ret. postage

8mm
COLORCHROME
8mm roll ASA 32 ..... $3.25

ANSCO COLOR FILM
8mm 25′ dbl. roll $2.25
8mm 100′ on Bolex spool 6.50

16mm
ANSCOCHROME ASA 32
100′ 16mm roll $8.00
50′ 16mm magazine 6.50

ANSCO COLOR FILM
16mm 100′ roll $5.00
16mm 100′ roll sound 5.00
16mm 50′ magazine 3.50

16mm KODACHROME
100 ft. rolls—processing included. Slightly outdated. Developed by Eastman Kodak. Reg. $10.00. Price **$6.00** per roll.

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BACKGROUND-X—PLUS-X, SUPER XX
100′ (Respooled) ..... 3 for $3.75
20X 35mm B&W ASA 50 ..... 6 for 1.98
36X 35mm B&W ASA 50 ..... 4 for 1.98

BULK FILM SPECIAL
- Brand New Daylight Film Loader
- 100′ 35mm negative film
- 12 empty 35mm cartridges

Yours for only **$5.95**

35mm COLOR
Ansco Color Daylight or Tungsten
100′ $15.00
20 exp. roll ..... 3 for 2.75

SUPER ANSCOCHROME ASA 100
High Speed—1959 Date Orig. Factory Packed
35mm 20X list ..... $2.35 ..... 3 for $5.95
120 list ..... 1.75 ..... 3 for 4.45

ROLL FILM
127, 120, 620, 116, 616, Black and White ASA 50 5 for $1.00

MOVIE FILM ACCESSORIES

Spools . . . Reels & cans . . . Magazines . . . Chemicals
CHEMICAL KITS—D88 ..... $1.00
One gallon size good for reversal processing of paper and film.
Empty 16mm magazines—3 for 2.00
16mm 100′ camera spools and cans—3 pair for 1.00
35mm cartridges or cans—one dozen for ... 1.00
16mm 800′ reels—3 for 2.00
16mm 1200′ reels 1.00
Cans for above each ..... .50
16mm 1600′ reels 1.25
Cans for above each ..... .50
8mm 400′ reels—2 for 1.00
Double cans for above—3 for 1.00
Film cement, bottle ..... .25
Ready made titles—2 sets of 10. Appropriate titles. Save $1.90 on each set. Only **$1.00** per set.

BULK MOVIE FILM

(black & white) ASA 50
supplied wound on CAMERA SPOOLS

8mm
4 25′ double 8mm on camera spools ... $ 1.79
16 rolls as above 5.95
64 rolls as above 22.00

16mm
15 rolls 16mm 100′ on camera spools ... $17.95
27 rolls as above 29.00
54 rolls as above 48.00

BULK supplies on cores:

8mm
400′ 8mm or 16mm ..... $ 3.50

16mm
15 16mm 25′ rolls 2.75
27 rolls as above 4.75
54 rolls as above 8.75
15 16mm 50′ rolls 5.95
27 rolls as above 10.75
54 rolls as above 19.50
Bulk Film does NOT include processing

BLACK & WHITE

35mm FILM
BACKGROUND-X—PLUS-X, SUPER XX
100′ (Respooled) ..... 3 for $3.75
20X 35mm B&W ASA 50 ..... 6 for 1.98
36X 35mm B&W ASA 50 ..... 4 for 1.98

BULK FILM SPECIAL
- **Brand New Daylight Film Loader**
- **100′ 35mm negative film**
- **12 empty 35mm cartridges**

Yours for only $5.95

35mm COLOR
Ansco Color Daylight or Tungsten
100′ $15.00
20 exp. roll ..... 3 for 2.75

SUPER ANSCOCHROME ASA 100
High Speed—1959 Date Orig. Factory Packed
35mm 20X list ..... $2.35 ..... 3 for $5.95
120 list ..... 1.75 ..... 3 for 4.45

ROLL FILM
127, 120, 620, 116, 616, Black and White ASA 50 5 for **$1.00**

MOVIE FILM ACCESSORIES

Spools . . . Reels & cans . . . Magazines . . . Chemicals
CHEMICAL KITS—D88 ..... $1.00
One gallon size good for reversal processing of paper and film.
Empty 16mm magazines—3 for 2.00
16mm 100′ camera spools and cans—3 pair for 1.00
35mm cartridges or cans—one dozen for ... 1.00
16mm 800′ reels—3 for 2.00
16mm 1200′ reels 1.00
Cans for above each ..... .50
16mm 1600′ reels 1.25
Cans for above each ..... .50
8mm 400′ reels—2 for 1.00
Double cans for above—3 for 1.00
Film cement, bottle ..... .25
Ready made titles—2 sets of 10. Appropriate titles. Save $1.90 on each set. Only **$1.00** per set.

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We eliminate the expense of handling time payments and pass these extra savings along to you! Just look at these low, low prices! They speak for themselves!

Save $45.00 Off List Price on a Brand New Latest ROLLEICORD OUTFIT

Camera	List	$124.50
Case	Price	15.00
Lens shade		4.00
16 exposure kit		7.50
24 exposure kit		7.50
		158.50

Complete Outfit Brand New **113.50**

BC Flashgun $8.95
3 filter kit 8.75

You Get More At Broadway HIGHEST TRADE-IN ALLOWANCES

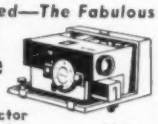
Save $42.50 Off List Price on a Brand New Petri f1.9 Outfit

- 7 Element f1.9 lens
- MXV Shutter
- 1 Second to 1/500
- Bright Frame Finder
- Rapid Advance Lever
- Deluxe Eveready case
- BC Flashgun

SPECIAL CASH PRICE **69.50** Complete

Filters 3.95 each — Lens shade 3.95

Just Arrived—The Fabulous KODAK Cavalcade



Fully Automatic 35mm Projector

- 500 Watt Turbo Cooled
- 5" f2.8 Lens
- Handles ALL Slides Glass, Metal or Readymount
- Guaranteed Anti Popping
- With Remote Control Cord and Case

List Price 149.50 SPECIAL **118.50**

Other Slide Projector Values

Argus 500, used	47.50
Bausch & Lomb 300, new	63.25
Bausch & Lomb 500, new	112.50
B & H Deluxe Model "D", semi	39.50
B & H Headliner 300, semi	31.50
B & H Roamatic w/case	82.50
Graflex Constellation 500 w/remote	49.50
Quickset 300 Auto, Brand New	39.50
Revere 553 300W, case, Used	47.50
Revere 555 500W, case, Used	56.50

SLIDE MAGAZINES AT TREMENDOUS SAVINGS! ALL BRAND NEW!

For		
Airequipt	12 for	18.97
LaBelle 6" pr.	12 for	18.58
LaBelle 9" pr.	12 for	25.79
Revere	12 for	8.33
TDC	12 for	5.69
Viewlex	12 for	5.69
Deluxe carrying cases for above:		
12 mag		5.99
24 mag		8.75

BROADWAY'S FAMOUS TELEPHOTO OR WIDE ANGLE LENSES

To fit all cameras
- Color corrected
- Hard surface coated
- All brand new
- All one price

Check this listing carefully . . . OVER 170 CAMERAS LISTED, plus many more not shown . . .

NOW ONLY **19.95** each, case, 1.50 addl.

For the following cameras . . .

- Aires 35-III, 3-IIIL
- Accuraflex
- Agfa Karat
- Ansco Aut. Reflex
- Ansco Karomat
- Ansco Memar
- Ansco Regent
- Ansco Speedex
- Ansco Viking
- Argus A, AA, AF
- Argus A-3, K, 21
- Argus C, C-2, C-3
- Argus C-4, C-44
- Asahiflex
- Baldina
- BAUER
- Bell & Howell
- Bolex B8, H16
- Bolsey B, B-2, B-22
- Bolsey C, C-22, C-3
- Bolsey Explorer
- Bolsey Jubilee
- Bower X, 35
- Braun 35
- Canon
- Certo Super 35
- Ciro 35
- Ciroflex B, C, D, E, F
- Clarus
- Classic 35
- Contaflex I, II
- Contaflex III, IV
- Contax
- Contessa
- Contina
- De Jur
- Diax Ib, IIb
- Edinex
- Edixa A, B, C, D
- Eumig
- Exa
- Exakta
- Flexaret
- Graflex 22
- Graphic 35
- Graphic Century 35
- Ikoflex I, Ia
- Ikoflex II, IIa, III
- Ikoflex Faforit
- Kalimar B
- Kalloflex
- Keystone
- Kodak Pony 135C
- Kodak Pony 828
- Kodak Retinette
- Kodak Retina I, II, IIA
- Kodak Retina IIc, IIIc
- Kodak Signet 35, 40
- Kodak Tourist
- Konica I, II, III
- Leica
- Leotax
- Lordomat
- Lordox
- Mamiya 6
- Mamiyaflex
- Mansfield
- Mercury II
- Minolta A, A II
- Minolta Autocord
- Minolta Autocord L
- Minolta Super A
- Nettar
- Nikon
- Olympus 35S
- Peerless
- Pentacon
- Perfex
- Polaroid 80, 80 A
- Polaroid 95, 95 A
- Polaroid 95 B, 700
- Polaroid Pathfinder
- Praktica
- Praktiflex
- Praktina
- Samoca 35
- Speed Graphic
- Soligor, Soligor 66
- Super Baldina
- Super Ikonta A, B
- Super Ikonta BX, III
- Super Westomat 35
- Voigtlander Bessa
- Voigtlander Vito
- Walzflex
- WARDFLEX
- Wollensak
- Yashica LM
- Yashicamat
- Yashica A
- Yashica C

ALSO FOR THE FOLLOWING STEREO CAMERAS @ 39.50 (case, 1.50 addl.)

- Bell & Howell Colorist
- Bell & Howell Vivid
- Busch Verascope
- Edixa Ia, IIa, IIIa
- Graphic
- Kodak
- Revere
- Stere-All
- Stereo Realist
- Viewmaster
- Wollensak

USED 35mm CAMERAS

	List When New	Sale Price
Aires IIIC, f1.9, w/case, New	$123.95	$ 92.50
Aires IIIL, f1.9	99.50	59.50
Asahiflex, f1.9	199.50	99.50
Bolsey B-2, f3.2	66.50	16.50
Bolsey Jubilee, f2.8	69.50	29.50
Contaflex III, f2.8	176.00	99.50
Exakta VX, f1.5, PS	415.00	176.00
Exakta IIA, f2 Auto Biotar	399.50	197.50
Graphic 35, f3.5, outfit		39.50
Graphic 35, f2.8, outfit, New		59.50
Kodak Signet 35, f3.5 Ektar	75.00	33.50
Kodak Retina IIA, f2, MX	127.50	52.50
Kodak Retina Reflex, f2, LVS	215.00	119.50
Leica A, f3.5 Elmar		28.50
Leica IIIC, f3.5		69.50
Leica IIIG, f2 Summicron	319.50	209.50
Leica M-3, f2 Summicron	450.00	282.00
Minox III	139.50	59.50
Minicord, f2, Synchro	139.50	69.50
Nikon S-2, f1.4	345.00	169.50
Petri, f2.8, w/case, New	79.50	44.95
Praktica FX3, f2.8 Auto Tessar	179.50	79.50
Ricoh 35, f3.5, outfit, New	69.50	39.50
Ricoh 500, f2.8, LVS, New	69.95	49.50
Ricoh 519, f1.9, w/case and meter, New	114.50	83.50

USED REFLEX CAMERAS

	List When New	Sale Price
Argoflex, f4.5		16.50
Graflex 22, f3.5	74.50	29.50
Korelle Reflex, f2.9		39.50
Minolta Autocord, f3.5		49.50
Minolta Autocord L, f3.5, New	124.50	89.50
Rocca Reflex, f2.8, MX	119.50	49.50
Rolleiflex Standard, f3.5		29.50
Rolleiflex, f3.5 Xenar, LVS	234.00	109.50
Rolleiflex, f3.5 G. Meter	251.95	157.00
Yashica C, f3.5, w/c, Demo	54.50	39.25
Yashica LM, f3.5, w/c, Demo	69.95	49.50
Yashicamat, f3.5, w/c, Demo	85.50	57.95
Yashica 44, f3.5, w/c, Demo	69.95	52.50
Yashica 635, f3.5, w/c, Demo	69.95	52.50

USED 16mm CAMERAS

Bell & Howell 200, f2.5		79.50
Bell & Howell 200T, f2.5		139.50
Cipelox, f2.5		34.50
Keystone A-7, f2.5		79.50
Wollensak 93—3 Lenses f1.9, f2.5, WA & f2.8 tele, Demo	287.50	179.50

USED 8mm CAMERAS

	List When New	Sale Price
Bell & Howell Electric Eye, f2.3, New		99.95
Bell & Howell 134, w/f2.5	89.95	58.50
Bell & Howell 134 TA, f1.9	179.95	113.50
Bell & Howell 252 TA, Turret, f1.9	99.50	59.50
Bell & Howell 290, Electric Eye, f1.9	169.95	89.50
De Jur Fadematic, f2.5	134.95	69.50
Franklin Mag 8, f1.9	119.50	39.50
Keystone K33, f2.5	89.95	49.50
Keystone K48, Mag Turret, f1.9	139.50	74.50
Revere 44, f2.5, Turret	139.50	72.50
Wollensak 23, Turret, 3 Lenses	239.50	139.50
Yashica 8T, f1.4, Turret, Demo	79.95	59.75

WE'RE CLEARING OUT STOCK ON THESE
Brand New Discontinued Cameras—1957 Models Limited Supply—Order Now

Argus C-3, C & F	$ 38.50
Argus C-4, C & F	64.50
Argus C-44, C & F	77.50
Brownie 8mm, f2.7	16.50
Canon V, f1.8	188.75
Canon V, f2.8	158.50
Konica III, MFX	68.50
Olympus S, f2.8	48.00
Retina IIIC, f2	89.95
Wollensak 42, f1.9	44.50
Wollensak 43, 3 f1.9 lenses	64.50

USED PRESS CAMERAS

2x3 Century Graphic, f4.5	$69.50
2x3 Busch, f4.5, RF, Synchro	59.50
2x3 ANN Graphic, f4.5, RF, Synchro	59.50
3x4 Speed, f4.5, RF	79.50
4x5 Speed, f4.7, RF, Synchro	89.50
4x5 B&J, f4.5, RF, Synchro	86.50
4x5 Crown, f4.7, RF, Synchro	119.00
4x5 Pace Speed, f4.7, RF, Synchro	159.00
4x5 Graflex, f4.5	89.50
3 cell Flash guns (USED)	11.95
4x5 CF Holders NEW (6) for	17.95

All items listed above are used unless otherwise specified . . . offered subject to prior sale. Many other used items in stock. Write us for your needs. On all orders please add postage, excess refunded.

Save $69.95 Off List Price on a Brand New CONTAFLEX OUTFIT

Contaflex I	List	153.00
Case		14.00
Lens Shade		2.95
Conversion filter		3.95
		173.90
Flashgun & shoe		8.95
Proxar Kit - 3 close-up lenses		7.95

SPECIAL **103.95**

Same outfit w/Contaflex II Add $21.00

Brand New 1958 Available Light Movie Camera ELMO BRT 8mm Turret Camera

with 1/2" f1.1 Normal lens and 1 1/2" f1.1 Telephoto lens

- Zoom finder for all lenses
- Battery operation—No winding
- Remote control and continuous run

Value of lenses alone 199.00

Our Special Cash Price **136.00** COMPLETE

Brand new 6.5 mm f1.4 Wide Angle lens. Our Reg. Price 44.95. If bought with above outfit . . . **9.95**

Brand new 8mm Zoom lens f2.8 8mm wide angle to 35mm tele. Matching Zoom Finder. Fits all 8mm cameras with standard lens mount. Our Special Cash Price **89.75**

Brand New 1958 Transistor Model HEILAND STROBONAR 64B

- 1 Piece Unit
- 2 Transistors
- Uses 3 "D" Batteries, AC or Rechargeable Nickel Cadmium
- Verified Kodachrome Guide No. 35
- Recharging Time—8 seconds
- 35 oz. total weight

47.50 with your flashgun in trade

Other Electronic Flash Values

Heiland VI, Used	69.50
Heiland Strobonar VII, New	39.50
Heiland 62 B, New	49.50
Heiland IV, Used	169.50
Braun Hobby Am, New	54.50
Ultrabilitz Matador, New	49.50
Ultrabilitz Expert V, New	46.50

Save $62.60! Brand New Discontinued KONICA III MFX OUTFIT

Camera, List	119.50
Case, List	12.50
Meter, List	8.95
BC Flash, List	8.95
Lens Hood, List	2.95
Total Value	152.35

SALE **89.75** complete

- f/2 Ctd. Hexanon
- Speeds 1 sec. to 1/500th
- Rapid film wind
- Bright frame finder

BROADWAY CAMERA SHOPS, Inc.
Dept. P68, 870 Broadway
New York 3, N. Y.

For special needs write to Henry Disney.

I would like to trade my . . . . . .

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at MINIFILM...

30 DAY TRIAL PERIOD, FULL REFUND–EASY TIME PAYMENTS, 1 YEAR GUARANTEE

NEW SUB-MINIATURE 16mm Still Cameras

Sticky III camera f3.5 lens, case, filter and lenscap.

SPECIAL **17.95**

New Ricoh 16 camera and case
List 39.95
SPECIAL **29.50**

New Minolta 16 camera, case, 2 close-up lenses.
List 39.95
SPECIAL **29.50**

NEW LATEST MODEL POLAROID

80 A	55.75
95 B	74.00
150 with rfdr.	83.00
800 with rfdr.	97.00
110 A with rfdr.	123.00
Print Copier	23.50

SPECIAL SALE POLAROID FILM

Type 31 — 6 rolls for	7.00
Type 32 — 6 rolls for	8.00
Type 41 — 6 rolls for	9.00
Type 44 — 6 rolls for	10.95

Sale of Famous Name Camera

Rapid wind film transport. Brilliant, single window Range and View finder. 1 to 1/300 sec. Synch. shutter complete with sunshade. List 59.95 with f3.5 ctd. lens

Case 3.50
BRAND NEW **28.95**

with fast f2.8 lens List 79.95
Case 3.50
BRAND NEW **38.95**

Save on accessory lenses for Exakta and Praktica

BRAND NEW

35mm f 3.5 Preset	39.50
35mm f 2.8 Preset	49.50
135mm f 3.5 Preset	29.50
135mm f 2.8 Preset	37.95
250mm f 5.5 Preset	69.50
400mm f 5.5 Preset	99.50
400mm f 4.5 Preset	129.50
500mm f 5	239.00
600mm f 5	429.00
800mm f 5	539.00
1000mm f 6.3	650.00

SAVE MORE THAN 50%

Brand New LORQOMAT Standard f2.8 ctd. lens, cpld. RF, Prontor SVS shutter 1 to 1/300 sec. MX Synch, Self timer, rapid wind, Fully INTERCHANGEABLE LENS. List 99.50

SPECIAL **47.95**

Accessories:	List	Sale Price
35mm f3.5 Wide Angle	59.50	29.75
90mm f4 Tele	69.50	34.75
135mm f4 Tele	99.50	49.75
35-90 Comb. Finder	12.50	6.25
Universal Turret fdr	34.50	17.25
Case	9.95	4.95

8mm ZOOM LENS OUTFIT

New Nominar, zooms from ½" to 1½", Fast f2.8 coated optics, focuses from 5 feet to infinity. Carrying case. Wide angle supplement, makes it an 8mm lens. Complete with Skylight filter.

BRAND NEW
SPECIAL ONLY **99.50**

8mm LENSES

Standard "D" Mounts
1½" f3.5 ff
SPECIAL **4.95**

Matched Sets
1½" f2.5 Telephoto fm 11.50
7mm f2.5 Wide Angle ff 11.50
FOR BOTH ONLY **18.95**

1½" f1.9 Telephoto fm 15.95
6½mm f1.9 Wide Angle ff 15.95
FOR BOTH ONLY **28.95**

BRAND NEW RETINA REFLEX

50mm F2 interchangeable lenses, auto diaphragm reflex finder, 1/500 sec., MX, self-timer, built-in exposure meter, auto shutter cocking and film advance. List Vol. 215.00

Case 10.00
SPECIAL ONLY **138.00**

TAPE RECORDERS SALE

New 2-speed Recorder, push button speed change control, dual track recording. Weights 15 lbs. Up to 2 hrs. recording time.

MINIFILM SPECIAL
ONLY **64.00**

Other Recorders:

Wollensak 1500	137.00
Wollensak 1515 Stereo	163.00
Revere T1100	119.00

EXCLUSIVE! New Leotax Model F

	List	Net
Camera with F2 ctd. lens, cpld. rfdr., synchro shutter	269.95	114.50
New leather eveready case	12.00	6.00
New 135mm F3.5 ctd. Topcor lens and case	147.40	54.75
New 35mm F2.8 ctd. Wide Angle lens, case and viewfinder	84.45	32.00
New 50mm-135mm Leotax Bright Line sportsfinder	29.95	14.95

Complete Outfit with all equipment listed above,
only 214.95

EXCLUSIVE at Minifilm!

The only fully automatic Twin Lens Reflex camera with THESE FEATURES selling under 200.00 THE NEW WEST GERMAN

ROLLOP 2.8

MINIFILM SPECIAL **79.50**
WITH Free EVEREADY CASE

COMPARE THESE FEATURES:

F2.8 coated, color corrected lenses Prontor LVS shutter 1 to 1/300 Sec., M X synchronization, Self timer. Split Image Rangefinder. Sportsfinder with Parallax corrected.

Plus Double exposure prevention, Film minder, depth of field scale.

TWIN LENS REFLEX

Sharp, Color corrected f3.5 ctd. lens 1 to 1/300 sec. shutter. Self-timer, Double bayonet mounts, Sportsfinder, Body focusing, Semi Automatic Film Transport.

BRAND NEW
SPECIAL ONLY **26.95**
Leather eveready case 5.95

NEW EXPOSURE METERS REDUCED

Brockway S and case	21.95
Weston III and case	21.95
GE Golden Crown and case	24.95
Norwood Super Director and case	15.00

Save on Brand New discontinued GOLD-E MANUMATIC slide projector

300 Watt, blower cooled. With stacking slide carrier keeps slides in proper order without the use of magazines. Original list 58.50

only 29.95

Announcing the new German single lens EDIXA REFLEX

Choose the features you want:

Automatic or Pre-Set lenses, Penta Prism or Waist Level Finder, Standard or with built-in meter. Wide selection of Top name lenses.

PRICED FROM **139.50**

BUY

New 8mm MOVIE OUTFIT

Kodak Brownie Turret camera with 3 (f2.3 lenses). New Brumberger 300 Watt Projector and case 30 x 40 Tripod Screen Deluxe leather Gadget Bag.

List. 154.65
SPECIAL **94.50**

SELL

Latest! New REVERE 503

Auto Magazine Projector 300 W. with case.

Revere No. 505, 500 W. only 44.95
B & L Balomatic 300 W. only 52.00
Kodak Cavalcade 500 only 114.50

TRADE

NEW FEDERAL ENLARGERS REDUCED

	List	Spec.
Federal 135, F4.5	54.95	27.50
Federal 240, F7.9	29.95	21.50
Federal 290, F6.3	43.95	34.00
Federal 450, F4.5	119.95	84.00
Federal 470, F4.5	142.95	104.00

ALWAYS 10% DOWN EASY PAYMENT PLAN

REVERE ELECTRIC EYE-MATIC CAMERAS

F1.8 lenses complete with built-in auto meter control.

	List	NEW SPECIAL
Model CA-1 Roll	139.50	104.50
Model CA-2 Roll Turret	169.50	131.00
Model CA-3 Magazine	169.50	131.00
Model CA-4 Magazine Turret	199.50	154.00

KODAK RETINA IIIc

F2, ctd. Cpld. RF, MX Synch, 1 to 1/500 sec. Rapid wind, LVS, built-in Exposure meter List 178.00

BRAND NEW *NEW SPECIAL ONLY **99.50**
Case 10.00

80mm f4 Longar Tele $4.00
35mm f5.6 Curtar WA 41.00
Complete outfit: Retina IIIc, case, flashgun, Longar and Curtar 199.50

(Newest Model) RETINA IIIC $114.00 NEW

Here is your chance to get this famous camera at an unbelievable price

Trade up to a CANON
List 333.00

Brand new latest CANON VT De Luxe w. f1.8 lens.

only 189.00 and your Argus C-3
only 164.00 and your Aires III.
only 169.00 and your Ricoh 500 LVS

Ask for our special Trade-in offer for your camera or low, low prices without Trade-in.

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10% DOWN DELIVERS ON MINIFILMS' QUICK CONFIDENTIAL PAYMENT PLAN

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AWON PHOTOGRAPHIC DISCOUNTS !!!

SAVE BY MAIL ! !

All Equipment BRAND NEW. Bargain outdated papers and film particularly for quantity work.

FRESH KODACHROME

This 1959 dated film is in its original sealed package fully guaranteed by the manufacturer. Day. or Tung. Price includes processing plus mounting of 35mm. MINIMUM ORDER—3 ROLLS.

Size	Kodachrome
8mm x 25' dble. roll.	$2.65
8mm x 25' dble. mag.	3.50
16mm x 50' mag.	5.25
16mm x 100' roll	7.75
35mm x 20 exp.	2.45
35mm x 36 exp.	3.80

Slide Tray SPECIAL

12 Viewlex or TDC slide trays (hold 36 slides each) $5.95
12 Airequipt slide trays (hold 36 slides each) $16.95

Special Sale! CASES for 12 Slide Trays

Dust-proof protection for your color slides. Holds up to 12 2x2" TDC Viewlex or Airequipt Trays.. $4.95
CASE for 24 TRAYS $7.95

Black & White Movie Film Processing

8mm x 25' dble.	$ .55 ea.
16mm x 100'	1.00 ea.
16mm x 50'	.65 ea.

SALE—Brand New—Latest Models

*MINOLTA Cameras

	LIST	AWON PRICE
35mm Minolta A w/case	$ 57.90	$40.50
Minolta A kit, case, fl	66.40	45.50
35mm Minolta A-2 w/case	78.90	$3.95
2¼ sq Autocord w/case	109.45	74.95
2¼ sq Minolta-L Autocord w/case	135.45	93.95

MOVIE FILM

Fast, fine grain B & W panchromatic ASA 50. Prices include new fast processing service.

8mm x 25' dble roll	$1.10
8mm x 100' Bolex dble	3.50
16mm x 50' mag	1.75
16mm x 100' XX ASA 100	2.95
16mm x 100' Kodak Plus X	2.95
16mm x 50' roll, Plus X	1.65
16mm x 50' mag, X or XX	2.25

BUY SIX... GET ONE EXTRA FREE

Bulk Film Special

- BRAND NEW DAYLIGHT FILM LOADER
- 100' 35mm NEGATIVE FILM
- 5 FILM CARTRIDGES

All for only $5.95

ARGUS Sale!

BRAND NEW—LATEST MODELS

COMBINATION DISCOUNT!
ARGUS C-3 w case, flash & reg. lens PLUS SOLIGAR 135mm f4.5 tele lens.
BOTH for only..... $64.95

	LIST	AWON PRICE
Argus C-3 w/case & fl. (disc)	$ 66.95	$41.95
Argus C-4 w/case & fl	99.50	66.95
Argus C-44 w/cs & fl	117.00	79.95
SLIDE PROJECTORS		
Argus 300 BC	39.50	29.50
500 wt. aut chngr, case	79.50	58.95

16mm x 400' BULK KODAK

ASA 24—Single or Double Perf. $6.95
Super XX (ASA 100)—Dble. Perf. 7.95

Mansfield "Holiday" brand new

8mm MOVIE PROJECTOR

- AWON SPECIAL • All die cast aluminum • 500 watt • Blower cooled • ctd. f1.6 lens • 400' reel capacity • LIMITED OFFER.

AWON DISCOUNT PRICE—only $36.95

Luggage type case—only $4.95

NEW EXPOSURE METERS

LIST		SPEC.
$ 9.95—	Alpex Direct Reading w/case	$ 5.95
	Sekonic Leader DeLux, Model 36, w/built-in booster cell and case	9.95
8.95—	Sekonic Leader DeLuxe, w/case	6.50
	Booster Cell for Sekonic Leader	2.95
9.95—	Compact, w/case	6.95
	DeJur SB Meter w/case only	4.95
9.95—	FR Meter w/booster & cases	5.95
32.50—	GE PR-1 w/case	18.95
16.06—	GE Mascot w/case	11.95
9.95—	G.E. Mascot II w/case	6.95
32.50—	Weston Meter III w/case	22.45
34.50—	GE Guardian w/case	23.50
18.00—	Weston DR, Dir. Read. w/case	11.95

DARKROOM ACCESSORIES

BRAND NEW	List	Sale
Yankee Lordomat 20 Tank	$10.95	$ 7.28
Yankee 4x5 Agitank cut film	8.95	6.95
Yankee Safe life w 3 Filters	4.95	3.89
Airequipt Dialmaster Easel 11x17	17.06	12.89
Airequipt Jr. Printer 4x5	10.77	7.55
Brumberger 5x7 Adj. Metal Printer	22.00	14.95
Brumberger 8x10 Paper Safe	10.95	8.80
Premier A1 Roto Dryer 12x29"	27.50	18.92
Statimaster 1" Brush	4.95	3.50
Spot-O-Matic Enlarging Meter	15.00	10.97
Morse G3 35.& 16mm Dev. Tank	34.00	25.95

ASA 50 Aero Ektachrome

35mm x 20 exp, $1.50 ea; 4 for $5; Process included.
35mm x 40' Bulk $3.95; 35mm x 75' Bulk $7.50
35mm x 75' Bulk plus 4½ gal. devel kit $8.95

NEW—SUPER HIGH SPEED—1959 DATE

ANSCOCHROME ASA 100+

35mm x 20 exp.—list $2.35—SALE 3 for $5.75
120 roll—list $1.75—AWON SALE 3 for $4.10
35mm x 100' roll $37.95
16mm x 100' roll $6.95

New! Ansco Super Hypan B&W Sheet Film—ASA 500

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Underwater Pictures continued from page 161

Another factor to consider is that color exposures do have distinct characteristics according to the depth at which they were made. For example, from two to six feet, there is a slight green tint. At a depth of approximately 30 feet, reds disappear; at about 50 feet oranges are lost, and at 80 feet, violets are no longer visible.

The wide latitude of black-and-white films like Tri-X also simplifies taking underwater pictures. By exposing Tri-X at its rated index of ASA 200, you'll find that you can get good exposures with the Shark from just beneath the surface to depths of 20 feet or more, which is about the limit one normally dives when equipped with "snorkling" gear.

When using high-speed black-and-white film, all you have to do is load your camera and start diving without being concerned about the depth's effect on your exposures. Another advantage of such a film is that it does not require any special processing for the progressively deeper depths you reach in skin-diving expeditions.

Underwater photographers are often troubled by a lack of contrast in their black-and-white negatives. But by trial-and-error experiments with different films and developing times, you can soon determine what combination works best for you. If possible, it's best to run a test on the particular body of water in which you're shooting, because waters vary in their filtration characteristics. This can affect both exposure and color rendition. Best results are obtained during hours when the sun is almost directly overhead.

A hole in the camera handle enables you to attach weights to the cord provided for ease in deeper diving. You never have to worry about losing an unweighted Shark in deep water if it should slip out of your hands. The camera's characteristic buoyancy will force it to the surface where it will float indefinitely.

You'll find that it's also a durable camera, built to withstand considerable usage. I have made shots with it as deep as 75 feet, and the camera worked perfectly every time.

If you have any doubts about "snorkling," it requires only an average swimming ability and the minimum of gear mentioned previously. The foot fins let you "flipper" through the water at a leisurely pace while the face mask keeps water out of your eyes and nose and gives a clear view of life below the surface. The snorkel tube extends above the surface, allowing you to breathe while keeping your face down in the water.

"Snorkling" is a safe sport, but remember that whenever you feel even slightly tired from swimming, you should float near the surface, keeping your head down. The snorkel then permits you to breathe fresh air from above as you float along, completely relaxed.

To breathe with the snorkel, place the rubber tubing between your lips, gripping it lightly so that your mouth doesn't tire. Then when surfacing from a dive, keep your face in the water, exhale sharply to blow out any water that might have accumulated in the snorkel, and start breathing. An hour or so of practice with the snorkel will increase your skill so that it will soon become second nature while skin-diving—and then you can concentrate on photography.

You'll find many excellent photographic opportunities for underwater pictures wherever you go. In the oceans, bays, rivers, lakes, and even swimming pools are many unusual and striking objects waiting for your camera. Naturally some amateurs will want to invest more heavily in cameras and diving gear, and excellent equipment is available in cameras, housings, and breathing devices.

For the photographer who has mastered "snorkling," the next step is "scuba" (self-contained breathing apparatus) diving. With air tanks and special breathing equipment, it is possible to stay underwater for much longer periods and to reach greater depths. "Scuba" diving with professional still and movie cameras offers an even greater realm of photographic activities.

On your vacation this year, or wherever you take a trip, be sure to take along your "snorkling" gear, underwater camera, and both black-and-white and color film. You'll find the waters you encounter in your travels hold great wonders for the photographer who will dive beneath the surface to record them.—▶

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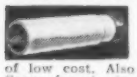

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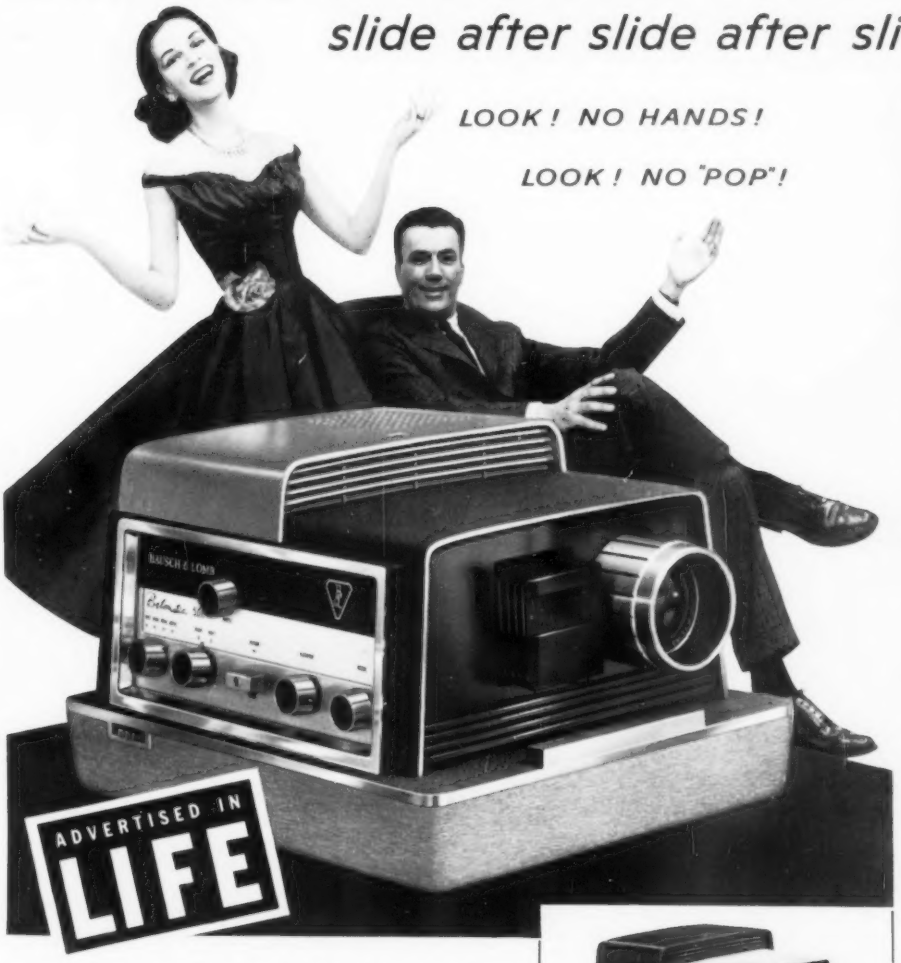

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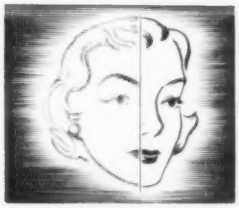

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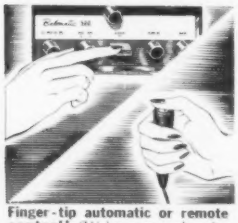

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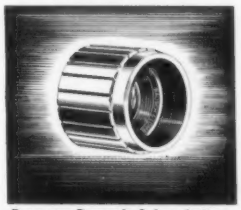

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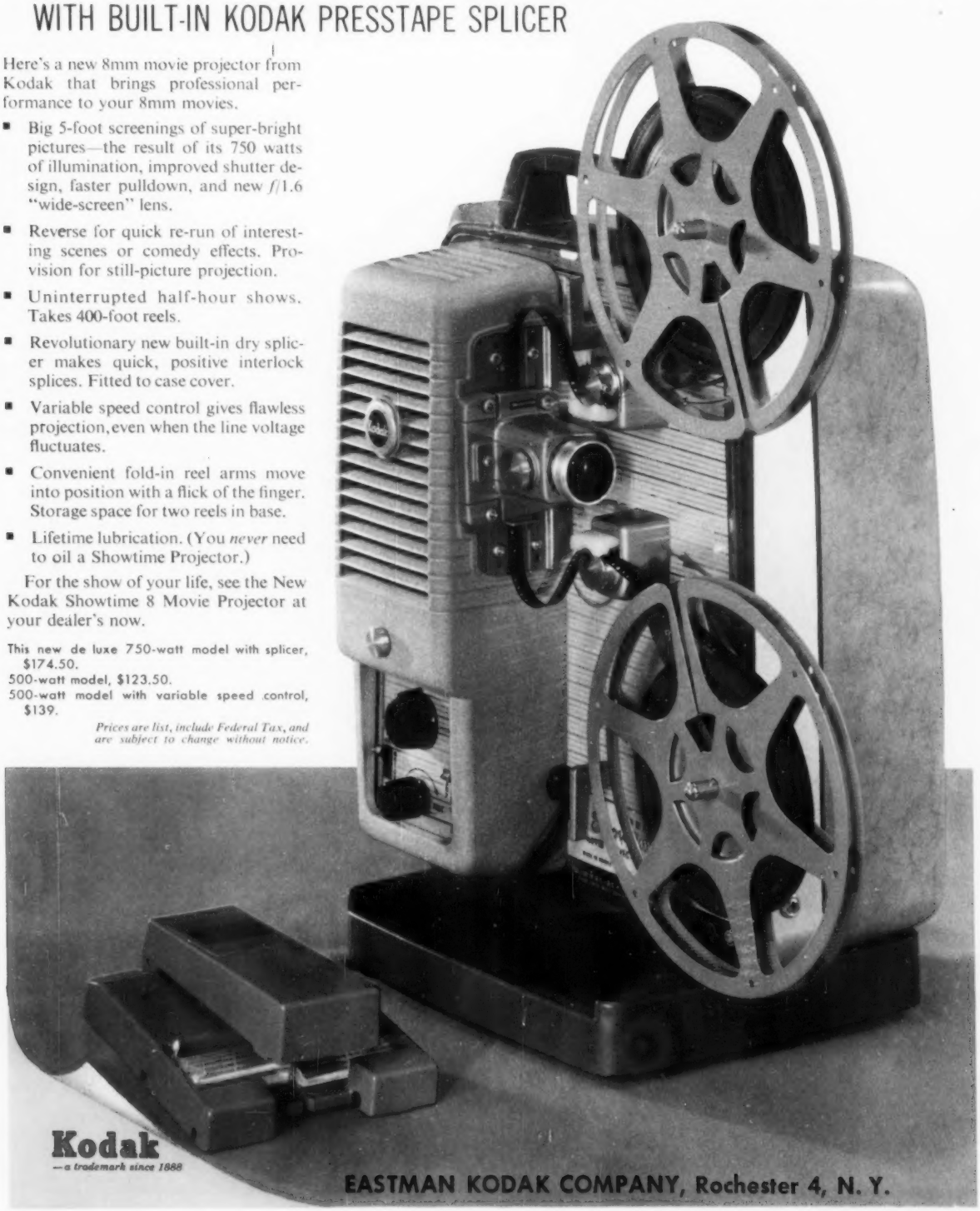

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